

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, DC 20549

FORM 10-Q

(Mark One)

**QUARTERLY REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended December 31, 2020

**TRANSITION REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

Commission file number 001-38042

**ARROWHEAD PHARMACEUTICALS, INC.**  
(Exact name of registrant as specified in its charter)

Delaware  
(State of incorporation)

46-0408024  
(I.R.S. Employer Identification No.)

177 E. Colorado Blvd, Suite 700  
Pasadena, California 91105  
(626) 304-3400  
(Address and telephone number of principal executive offices)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par Value \$0.001 per share	ARWR	The Nasdaq Global Select Market

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes  No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated Filer	<input type="checkbox"/>
Non-Accelerated Filer	<input type="checkbox"/>	Smaller Reporting Company	<input type="checkbox"/>
Emerging Growth Company	<input type="checkbox"/>		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes  No

The number of shares of the registrant's common stock outstanding as of February 1, 2021 was 103,792,410.

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## PART I. FINANCIAL INFORMATION

## ITEM 1. FINANCIAL STATEMENTS

**Arrowhead Pharmaceuticals, Inc.**  
**Consolidated Balance Sheets**  
(In thousands, except per share amounts)

	(unaudited) December 31, 2020	September 30, 2020
<b>ASSETS</b>		
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	\$ 139,921	\$ 143,583
Accounts receivable	9,002	845
Prepaid expenses	7,069	4,250
Other current assets	2,318	1,782
Marketable securities	86,012	85,020
Short term investments	79,394	86,890
<b>TOTAL CURRENT ASSETS</b>	<b>323,716</b>	<b>322,370</b>
Property and equipment, net	33,730	30,881
Intangible assets, net	14,938	15,363
Long term investments	110,855	137,487
Right-of-use assets	15,747	16,138
Other assets	265	265
<b>TOTAL ASSETS</b>	<b>\$ 499,251</b>	<b>\$ 522,504</b>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
<b>CURRENT LIABILITIES</b>		
Accounts payable	\$ 4,827	\$ 6,829
Accrued expenses	9,570	5,389
Accrued payroll and benefits	2,753	8,061
Lease liabilities	1,183	1,095
Deferred revenue	6,744	19,291
Other current liabilities	17	16
<b>TOTAL CURRENT LIABILITIES</b>	<b>25,094</b>	<b>40,681</b>
<b>LONG-TERM LIABILITIES</b>		
Lease liabilities, net of current portion	19,685	20,044
<b>TOTAL LONG-TERM LIABILITIES</b>	<b>19,685</b>	<b>20,044</b>
Commitments and contingencies (Note 7)		
<b>STOCKHOLDERS' EQUITY</b>		
Arrowhead Pharmaceuticals, Inc. stockholders' equity:		
Common stock, \$0.001 par value; 145,000 shares authorized; 103,194 and 102,376 shares issued and outstanding as of December 31, 2020 and September 30, 2020, respectively	195	195
Additional paid-in capital	978,655	965,410
Accumulated other comprehensive income (loss)	198	18
Accumulated deficit	(524,576)	(503,844)
<b>TOTAL STOCKHOLDERS' EQUITY</b>	<b>454,472</b>	<b>461,779</b>
<b>TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY</b>	<b>\$ 499,251</b>	<b>\$ 522,504</b>

*The accompanying notes are an integral part of these unaudited consolidated financial statements.*

**Arrowhead Pharmaceuticals, Inc.**  
**Consolidated Statements of Operations and Comprehensive Income (Loss)**  
**(unaudited)**  
**(In thousands, except per share amounts)**

	<b>Three Months Ended December 31,</b>	
	<b>2020</b>	<b>2019</b>
<b>REVENUE</b>	<b>\$ 21,303</b>	<b>\$ 29,455</b>
<b>OPERATING EXPENSES</b>		
Research and development	36,555	23,374
General and administrative expenses	8,802	10,934
<b>TOTAL OPERATING EXPENSES</b>	<b>45,357</b>	<b>34,308</b>
OPERATING INCOME (LOSS)	(24,054)	(4,853)
<b>OTHER INCOME (EXPENSE)</b>		
Interest income (expense), net	2,169	2,180
Other income (expense)	1,153	-
<b>TOTAL OTHER INCOME (EXPENSE)</b>	<b>3,322</b>	<b>2,180</b>
INCOME (LOSS) BEFORE INCOME TAXES	(20,732)	(2,673)
Provision for income taxes	-	-
NET INCOME (LOSS)	(20,732)	(2,673)
NET INCOME (LOSS) PER SHARE - BASIC	\$ (0.20)	\$ (0.03)
NET INCOME (LOSS) PER SHARE - DILUTED	\$ (0.20)	\$ (0.03)
Weighted average shares outstanding - basic	102,757	97,090
Weighted average shares outstanding - diluted	102,757	97,090
OTHER COMPREHENSIVE INCOME (LOSS), NET OF TAX:		
Foreign currency translation adjustments	180	196
COMPREHENSIVE INCOME (LOSS)	<b>\$ (20,552)</b>	<b>\$ (2,477)</b>

*The accompanying notes are an integral part of these unaudited consolidated financial statements.*

**Arrowhead Pharmaceuticals, Inc.**  
**Consolidated Statement of Stockholders' Equity**  
**(unaudited)**  
**(In thousands, except per share amounts)**

	Common Stock	Amount (\$)	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Non-controlling Interest	Totals
<b>Balance at September 30, 2019</b>	95,506	\$ 187	\$ 664,086	\$ (392)	\$ (419,291)	\$ (555)	\$ 244,035
Stock-based compensation	-	-	4,491	-	-	-	4,491
Exercise of stock options	472	1	3,001	-	-	-	3,002
Common stock - restricted stock units vesting	533	1	(1)	-	-	-	-
Common stock - issued for cash	4,600	5	250,473	-	-	-	250,478
Foreign currency translation adjustments	-	-	-	196	-	-	196
Net income (loss) for the three months ended December 31, 2019	-	-	-	-	(2,673)	-	(2,673)
<b>Balance at December 31, 2019</b>	<u>101,111</u>	<u>\$ 194</u>	<u>\$ 922,050</u>	<u>\$ (196)</u>	<u>\$ (421,964)</u>	<u>\$ (555)</u>	<u>\$ 499,529</u>

	Common Stock	Amount (\$)	Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Totals
<b>Balance at September 30, 2020</b>	102,376	\$ 195	\$ 965,410	\$ 18	\$ (503,844)	\$ 461,779
Stock-based compensation	-	-	8,144	-	-	8,144
Exercise of stock options	538	-	5,101	-	-	5,101
Common stock - restricted stock units vesting	280	-	-	-	-	-
Foreign currency translation adjustments	-	-	-	180	-	180
Net income (loss) for the three months ended December 31, 2020	-	-	-	-	(20,732)	(20,732)
<b>Balance at December 31, 2020</b>	<u>103,194</u>	<u>\$ 195</u>	<u>\$ 978,655</u>	<u>\$ 198</u>	<u>\$ (524,576)</u>	<u>\$ 454,472</u>

*The accompanying notes are an integral part of these unaudited consolidated financial statements.*

**Arrowhead Pharmaceuticals, Inc.**  
**Consolidated Statements of Cash Flows**  
**(unaudited)**  
**(In thousands, except per share amounts)**

	Three Months Ended December 31,	
	2020	2019
<b>CASH FLOWS FROM OPERATING ACTIVITIES:</b>		
Net income (loss)	\$ (20,732)	\$ (2,673)
Stock-based compensation	8,144	4,492
Depreciation and amortization	1,848	1,260
Amortization/(accretion) of note premiums	(302)	177
Changes in operating assets and liabilities:		
Accounts receivable	(8,157)	(684)
Prepaid expenses and other current assets	(3,193)	1,378
Deferred revenue	(12,547)	(28,771)
Accounts payable	(2,002)	4,552
Accrued expenses	(1,126)	(4,214)
Other	(855)	953
<b>NET CASH PROVIDED BY (USED IN) OPERATING ACTIVITIES</b>	<b>(38,922)</b>	<b>(23,530)</b>
<b>CASH FLOWS FROM INVESTING ACTIVITIES:</b>		
Purchases of property and equipment	(4,271)	(4,320)
Proceeds from sale of marketable securities	34,429	13,600
<b>NET CASH PROVIDED BY (USED IN) INVESTING ACTIVITIES</b>	<b>30,158</b>	<b>9,280</b>
<b>CASH FLOWS FROM FINANCING ACTIVITIES:</b>		
Proceeds from the exercises of stock options	5,102	3,001
Proceeds from the issuance of common stock	-	250,477
<b>NET CASH PROVIDED BY (USED IN) FINANCING ACTIVITIES</b>	<b>5,102</b>	<b>253,478</b>
<b>NET INCREASE (DECREASE) IN CASH</b>	<b>(3,662)</b>	<b>239,228</b>
<b>CASH AND CASH EQUIVALENTS AT BEGINNING OF PERIOD</b>	<b>143,583</b>	<b>221,804</b>
<b>CASH AND CASH EQUIVALENTS AT END OF PERIOD</b>	<b>\$ 139,921</b>	<b>\$ 461,032</b>

*The accompanying notes are an integral part of these unaudited consolidated financial statements.*

**Arrowhead Pharmaceuticals, Inc.**  
**Notes to Consolidated Financial Statements**  
**(unaudited)**

Unless otherwise noted, (1) the term “Arrowhead” refers to Arrowhead Pharmaceuticals, Inc., a Delaware corporation and its Subsidiaries, (2) the terms “Company,” “we,” “us,” and “our,” refer to the ongoing business operations of Arrowhead and its Subsidiaries, whether conducted through Arrowhead or a subsidiary of Arrowhead, (3) the term “Subsidiaries” refers to Arrowhead Madison Inc. (“Arrowhead Madison”) and Arrowhead Australia Pty Ltd (“Arrowhead Australia”), (4) the term “Common Stock” refers to Arrowhead’s Common Stock, (5) the term “Preferred Stock” refers to Arrowhead’s Preferred Stock and (6) the term “Stockholder(s)” refers to the holders of Arrowhead Common Stock.

**NOTE 1. ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES**

*Nature of Business and Recent Developments*

Arrowhead Pharmaceuticals, Inc. develops medicines that treat intractable diseases by silencing the genes that cause them. Using a broad portfolio of RNA chemistries and efficient modes of delivery, Arrowhead therapies trigger the RNA interference mechanism to induce rapid, deep and durable knockdown of target genes. RNA interference (“RNAi”) is a mechanism present in living cells that inhibits the expression of a specific gene, thereby affecting the production of a specific protein. Arrowhead’s RNAi-based therapeutics leverage this natural pathway of gene silencing. The Company’s pipeline includes ARO-APOC3 for hypertriglyceridemia, ARO-ANG3 for dyslipidemia, ARO-HSD for liver disease, ARO-ENaC for cystic fibrosis, ARO-HIF2 for renal cell carcinoma, ARO-LUNG2 as a candidate to treat chronic obstructive pulmonary disorder (“COPD”) and ARO-COV for treatment for the current novel coronavirus that causes COVID-19 and other possible future pulmonary-borne pathogens. ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 are being developed for undisclosed liver-expressed targets under a collaboration agreement with Janssen Pharmaceuticals, Inc. (“Janssen”). ARO-AAT for liver disease associated with alpha-1 antitrypsin deficiency (“AATD”) was out-licensed to Takeda Pharmaceuticals U.S.A., Inc. (“Takeda”) in October 2020. JNJ3989 (formerly referred to as ARO-HBV) for chronic hepatitis B virus was out-licensed to Janssen in October 2018. Olpasiran (formerly referred to as AMG 890 or ARO-LPA) for cardiovascular disease was out-licensed to Amgen Inc. (“Amgen”) in 2016.

Arrowhead operates lab facilities in Madison, Wisconsin and San Diego, California, where the Company’s research and development activities, including the development of RNAi therapeutics, are based. The Company’s principal executive offices are located in Pasadena, California.

During the first quarter of fiscal year 2021, the Company continued to develop its pipeline and partnered candidates. The Company hosted a key opinion leader webinar on its cardiometabolic candidates, ARO-APOC3 and ARO-ANG3. The Company presented positive interim clinical data from AROAAT2002, an open-label Phase 2 clinical study of ARO-AAT, the Company’s second-generation investigational RNAi therapeutic being developed as a treatment for the rare genetic liver disease associated with AATD. The Company also announced positive clinical data on its cardiometabolic candidates, ARO-APOC3 and ARO-ANG3, at the American Heart Association (“AHA”) Scientific Session 2020. Finally, the Company announced a collaboration with Takeda to co-develop and co-commercialize ARO-AAT for alpha-1 antitrypsin-associated liver disease. See Note 2 for more information regarding the collaboration with Takeda.

The Company’s partnered candidates under its collaboration agreements also continue to progress. Janssen began dosing patients in a Phase 2b triple combination study called REEF-1, designed to enroll up to 450 patients with chronic hepatitis B infection. In connection with the start of this study, Arrowhead earned a \$25.0 million milestone payment under the Company’s License Agreement with Janssen (“Janssen License Agreement”). The Company is currently performing discovery, optimization and preclinical research and development for ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 for Janssen as part of the Company’s Research Collaboration and Option Agreement with Janssen (“Janssen Collaboration Agreement”). Under the terms of the Janssen agreements taken together, the Company has received \$175.0 million as an upfront payment, \$75.0 million in the form of an equity investment by Johnson & Johnson Innovation-JJDC, Inc. (“JJDC”) in Arrowhead Common Stock, two \$25.0 million milestone payments and may receive up to \$1.6 billion in development and sales milestones payments for the Janssen License Agreement, and up to \$1.9 billion in development and sales milestone payments for the three additional targets covered under the Janssen Collaboration Agreement. The Company is further eligible to receive tiered royalties on product sales up to mid-teens under the Janssen License Agreement and up to low teens under the Janssen Collaboration Agreement.

The Company’s collaboration agreement with Amgen for Olpasiran (previously referred to as AMG 890 or ARO-LPA), (the “Second Collaboration and License Agreement” or “Olpasiran Agreement”), continues to progress. In July 2020, Amgen initiated a Phase 2 clinical study, which resulted in a \$20.0 million milestone payment to the Company. The Company has received \$35.0 million in upfront payments, \$21.5 million in the form of an equity investment by Amgen in the Company’s Common Stock, \$30.0 million in milestone payments, and may receive up to an additional \$400.0 million in remaining development, regulatory and sales milestone payments. The Company is eligible to receive up to low double-digit royalties for sales of products under the Olpasiran Agreement.

On October 7, 2020, the Company entered into an Exclusive License and Co-Funding Agreement with Takeda (the “Takeda License Agreement”). Under the Takeda License Agreement, Takeda and the Company will co-develop the Company’s ARO-AAT program. Within the United States, ARO-AAT, if approved, will be co-commercialized under a 50/50 profit sharing structure. Outside the United States, Takeda will lead the global commercialization strategy and receive an exclusive license to commercialize ARO-AAT with the Company eligible to receive tiered royalties of 20% to 25% on net sales. In January 2021, the Company received \$300.0 million as an upfront payment and is eligible to receive potential development, regulatory and commercial milestones of up to \$740.0 million.

The revenue recognition for these collaboration agreements is discussed further in Note 2 below.

The Company is actively monitoring the ongoing COVID-19 pandemic. The financial results for the three months ended December 31, 2020 were not significantly impacted by COVID-19. During fiscal year 2020, the Company had temporarily paused enrollment in its two ARO-AAT studies, SEQUOIA and the ARO-AAT 2002 study, but resumed the process of screening and enrolling patients. During the pause in enrollment, patients already enrolled in these studies continued to be dosed per protocol and continued to come in for their follow up visits. Additional delays have occurred in the Company’s earlier stage programs, but the Company does not expect a material impact to any program’s anticipated timelines. Additionally, the Company’s operations at its research and development facilities in Madison, Wisconsin and San Diego, California, and its corporate headquarters in Pasadena, California have continued to operate with limited impact, other than for enhanced safety measures, including work from home policies. However, the Company cannot predict the impact the progression of COVID-19 will have on future financial results due to a variety of factors including the ability of the Company’s clinical sites to continue to enroll subjects, the ability of the Company’s suppliers to continue to operate, the continued good health and safety of the Company’s employees, and ultimately the length of the COVID-19 pandemic.

### *Liquidity*

The Consolidated Financial Statements have been prepared in conformity with the accounting principles generally accepted in the United States of America (“GAAP”), which contemplate the continuation of the Company as a going concern. Historically, the Company’s primary source of financing has been through the sale of its securities. Research and development activities have required significant capital investment since the Company’s inception. The Company expects its operations to continue to require cash investment to pursue its research and development goals, including clinical trials and related drug manufacturing.

At December 31, 2020, the Company had \$139.9 million in cash and cash equivalents (including \$2.4 million in restricted cash), \$79.4 million in short-term investments, \$86.0 million in marketable securities and \$110.9 million in long-term investments to fund operations. During the three months ended December 31, 2020, the Company’s cash and investments balance decreased by \$36.8 million, which was primarily the result of funding its research and development operations.

### *Summary of Significant Accounting Policies*

There have been no changes to the significant accounting policies disclosed in the Company’s most recent Annual Report on Form 10-K.

### *Recent Accounting Pronouncements*

In November 2018, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2018-18 Collaborative Arrangements (Topic 808). This update provides clarification on the interaction between Revenue Recognition (Topic 606) and Collaborative Arrangements (Topic 808) including the alignment of unit of account guidance between the two topics. ASU 2018-18 became effective for the Company on October 1, 2020 and did not have a material impact on its Consolidated Financial Statements.

In August 2018, the FASB issued ASU No. 2018-15 Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. The new standard requires that certain implementation costs for cloud computing arrangements are capitalized and amortized over the term of the associated hosted cloud computing arrangement service. Capitalized implementation costs are classified in prepaid expenses and other assets. The amortization of the capitalized asset is presented in the same line on the statement of operations and comprehensive loss as the fees for the associated hosted cloud computing arrangement service and not included with depreciation or amortization expense related to property and equipment or intangible assets. Cash flows related to capitalized implementation costs are presented in cash flows used in operating activities. ASU 2018-15 became effective for the Company on October 1, 2020 and did not have a material impact on its Consolidated Financial Statements.



## NOTE 2. COLLABORATION AND LICENSE AGREEMENTS

### *Amgen Inc.*

On September 28, 2016, the Company entered into two Collaboration and License Agreements and a Common Stock Purchase Agreement with Amgen. Under one of the collaboration and license agreements (the “Second Collaboration and License Agreement” or “Olpasiran Agreement”), Amgen has received a worldwide, exclusive license to Arrowhead’s novel, RNAi Olpasiran (previously referred to as AMG 890 or ARO-LPA) program. These RNAi molecules are designed to reduce elevated lipoprotein(a), which is a genetically validated, independent risk factor for atherosclerotic cardiovascular disease. Under the other collaboration and license agreement (the “First Collaboration and License Agreement” or the “ARO-AMG1 Agreement”), Amgen received an option to a worldwide, exclusive license for ARO-AMG1, an RNAi therapy for an undisclosed genetically validated cardiovascular target. In both agreements, Amgen is wholly responsible for clinical development and commercialization. Under the terms of the agreements taken together, the Company has received \$35.0 million in upfront payments, \$21.5 million in the form of an equity investment by Amgen in the Company’s Common Stock, and \$30.0 million in milestone payments, and may receive up to an additional \$400.0 million in remaining development, regulatory and sales milestone payments. The Company is further eligible to receive up to low double-digit royalties for sales of products under the Olpasiran Agreement. In July 2019, Amgen informed the Company that it would not be exercising its option for an exclusive license for ARO-AMG1, and as such, there will be no further milestone or royalty payments under the ARO-AMG1 Agreement.

The Company substantially completed its performance obligations under the Olpasiran Agreement and the ARO-AMG1 Agreement. Future milestones and royalties achieved will be recognized in their entirety when earned. In July 2020, Amgen initiated a Phase 2 clinical study, which resulted in a \$20.0 million milestone payment to the Company. During the three months ended December 31, 2020 and 2019, the Company recognized \$0 and \$0, respectively. As of December 31, 2020, there were \$0 in contract assets recorded as accounts receivable and \$0 contract liabilities recorded as current deferred revenue on the Company’s Consolidated Balance Sheets.

### *Janssen Pharmaceuticals, Inc.*

On October 3, 2018, the Company entered into the Janssen License Agreement and the Janssen Collaboration Agreement with Janssen, part of the Janssen Pharmaceutical Companies of Johnson & Johnson. The Company also entered into a Stock Purchase Agreement (“JJDC Stock Purchase Agreement”) with JJDC. Under the Janssen License Agreement, Janssen has received a worldwide, exclusive license to the Company’s JNJ-3989 (ARO-HBV) program, the Company’s third-generation subcutaneously administered RNAi therapeutic candidate being developed as a potential therapy for patients with chronic hepatitis B virus infection. Beyond the Company’s Phase 1/2 study of JNJ-3989 (ARO-HBV), Janssen is also wholly responsible for clinical development and commercialization of JNJ-3989. Under the Janssen Collaboration Agreement, Janssen will be able to select three new targets against which Arrowhead will develop clinical candidates. These candidates are subject to certain restrictions and do not include candidates that already were in the Company’s pipeline. The Company will perform discovery, optimization and preclinical research and development, entirely funded by Janssen, which on its own or in combination with Janssen development work, is sufficient to allow the filing of a U.S. Investigational New Drug application or equivalent, at which time Janssen will have the option to take an exclusive license. If the option is exercised, Janssen will be wholly responsible for clinical development and commercialization of each optioned candidate. Under the terms of the agreements taken together, the Company has received \$175.0 million as an upfront payment, \$75.0 million in the form of an equity investment by JJDC in Arrowhead Common Stock under the JJDC Stock Purchase Agreement, and two \$25.0 million milestone payments, and may receive up to \$1.6 billion in development and sales milestones payments for the Janssen License Agreement, and up to \$1.9 billion in development and sales milestone payments for the three additional targets covered under the Janssen Collaboration Agreement. The Company is further eligible to receive tiered royalties up to mid-teens under the Janssen License Agreement and up to low teens under the Janssen Collaboration Agreement on product sales.

The Company has evaluated these agreements in accordance with the new revenue recognition standard that became effective for the Company on October 1, 2018. The adoption of the new revenue standard did not have a material impact on the balances reported when evaluated under the superseded revenue standard. At the inception of these agreements, the Company has identified one distinct performance obligation. Regarding the Janssen License Agreement, the Company determined that the key deliverables included the license and certain R&D services including the Company’s responsibility to complete the Phase 1/2 study of JNJ-3989 (ARO-HBV) and the Company’s responsibility to ensure certain manufacturing of JNJ-3989 (ARO-HBV) drug product is completed and delivered to Janssen (the “Janssen R&D Services”). Due to the specialized and unique nature of these Janssen R&D Services, and their direct relationship with the license, the Company determined that these deliverables represent one distinct bundle and thus, one performance obligation. The Company also determined that Janssen’s option to require the Company to develop up to three new targets is not a material right, and thus, not a performance obligation at the onset of the agreement. The consideration for this option is accounted for separately.

The Company determined the transaction price totaled approximately \$252.6 million which includes the upfront payment, the premium paid by JJDC for its equity investment in the Company, the two \$25.0 million milestone payments earned and estimated payments for reimbursable Janssen R&D services to be performed. The Company has allocated the total \$252.6 million initial transaction price to its one distinct performance obligation for the JNJ-3989 (ARO-HBV) license and the associated Janssen R&D Services. This revenue will be recognized using a proportional performance method (based on actual costs incurred versus total estimated costs incurred) beginning in October 2018 and ending as the Company's efforts in overseeing the Phase 1/2 clinical trial are completed. During the three months ended December 31, 2020 and 2019, the Company recognized approximately \$12.7 million and \$28.8 million of Revenue associated with this performance obligation, respectively. As of December 31, 2020, there were \$0 in contract assets recorded as accounts receivable, and \$6.7 million of contract liabilities recorded as current deferred revenue on the Company's Consolidated Balance Sheets. The \$6.7 million of current deferred revenue is driven by the upfront payment, the premium paid by JJDC for its equity investment in the Company, and the two \$25.0 million milestone payments earned, net of revenue recognized to date.

The Company has begun to conduct its discovery, optimization and preclinical research and development of ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 under the Janssen Collaboration Agreement. All costs and labor hours spent by the Company will be entirely funded by Janssen. During the three months ended December 31, 2020 and 2019, the Company recognized \$0.3 million and \$0.7 million of Revenue associated with these efforts, respectively. As of December 31, 2020, there were \$0.8 million of contract assets recorded as accounts receivable and \$0 of contract liabilities recorded as current deferred revenue on the Company's Consolidated Balance Sheets.

#### *Takeda Pharmaceuticals U.S.A., Inc.*

On October 7, 2020, the Company entered into the Takeda License Agreement with Takeda. Under the Takeda License Agreement, Takeda and the Company will co-develop the Company's ARO-AAT program, the Company's second-generation subcutaneously administered RNAi therapeutic candidate being developed as a treatment for liver disease associated with alpha-1 antitrypsin deficiency. Within the United States, ARO-AAT, if approved, will be co-commercialized under a 50/50 profit sharing structure. Outside the United States, Takeda will lead the global commercialization strategy and receive an exclusive license to commercialize ARO-AAT with the Company eligible to receive tiered royalties of 20% to 25% on net sales. In January 2021, the Company received \$300.0 million as an upfront payment and is eligible to receive potential development, regulatory and commercial milestones of up to \$740.0 million.

The Company has evaluated the Takeda License Agreement in accordance with the new revenue recognition requirements that became effective for the Company on October 1, 2018. The adoption of the new revenue standard will not have a material impact on the balances reported when evaluated under the superseded revenue standard. At the inception of the Takeda License Agreement, the Company has identified one distinct performance obligation. The Company determined that the key deliverables included the license and certain R&D services including the Company's responsibilities to complete the initial portion of the SEQUOIA study, to complete the ongoing Phase 2 AROAAT2002 study and to ensure certain manufacturing of ARO-AAT drug product is completed and delivered to Takeda (the "Takeda R&D Services"). Due to the specialized and unique nature of these Takeda R&D services, and their direct relationship with the license, the Company determined that these deliverables represent one distinct bundle and thus, one performance obligation. Beyond the Takeda R&D Services, Takeda will be responsible for managing future clinical development and commercialization. The Company will co-fund certain of the development and commercialization costs that Takeda manages, and these co-funding amounts will be offset against amounts owed to Arrowhead, either from milestones or royalties earned, or profits earned under the 50/50 profit sharing structure for U.S. commercialization.

The Company determined the initial transaction price totaled approximately \$300.0 million, which includes the upfront payment. The Company will exclude any future estimated milestones, royalties, or profit-sharing payments from this transaction price to date. The Company will allocate the total \$300.0 million initial transaction price to its one distinct performance obligation for the ARO-AAT license and the associated Takeda R&D Services. Revenue will be recognized using a proportional performance method (based on actual costs incurred versus total estimated costs incurred for the Takeda R&D Services). Revenue for the three months ended December 31, 2020 and 2019 were \$8.2 million and \$0, respectively. As of December 31, 2020, there were \$8.2 million in contract assets recorded as accounts receivable.

**NOTE 3. PROPERTY AND EQUIPMENT**

The following table summarizes the Company's major classes of property and equipment:

	<u>December 31, 2020</u>	<u>September 30, 2020</u>
	(In thousands)	
Computers, office equipment and furniture	\$ 662	\$ 662
Research equipment	23,763	20,654
Software	356	631
Leasehold improvements	26,676	25,238
Total gross fixed assets	51,457	47,185
Less: Accumulated depreciation and amortization	(17,727)	(16,304)
Property and equipment, net	<u>\$ 33,730</u>	<u>\$ 30,881</u>

Depreciation and amortization expense for property and equipment for the three months ended December 31, 2020 and 2019 was \$1.4 million and \$0.8 million, respectively.

**NOTE 4. INVESTMENTS**

Investments at December 31, 2020 primarily consisted of corporate bonds that have maturities of less than 36 months and marketable equity securities. The Company's corporate bonds consist of both short-term and long-term bonds and are classified as "held-to-maturity" on the Company's Consolidated Balance Sheets. The Company's marketable equity securities consist of mutual funds that invest in U.S. government bonds, U.S. government agency bonds, corporate bonds and other asset backed debt securities. Dividends from these funds are automatically reinvested. The Company may also invest excess cash balances in certificates of deposits, money market accounts, government-sponsored enterprise securities, corporate bonds and/or commercial paper. The Company accounts for its held to maturity investments in accordance with FASB ASC 320, Investments – Debt and Equity Securities and its marketable equity securities in accordance with ASC 321, Investments – Equity Securities.

The following tables summarize the Company's short-term and long-term investments and marketable securities as of December 31, 2020 and September 30, 2020 by measurement category.

**Held to Maturity**

	<u>As of December 31, 2020</u>			
	(In thousands)			
	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Commercial notes (due within one year)	\$ 79,394	\$ 1,203	\$ -	\$ 80,597
Commercial notes (due within one through three years)	\$ 110,855	\$ 3,634	\$ (23)	\$ 114,466
Total	<u>\$ 190,249</u>	<u>\$ 4,837</u>	<u>\$ (23)</u>	<u>\$ 195,063</u>

  

	<u>As of September 30, 2020</u>			
	(In thousands)			
	<u>Amortized Cost</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Commercial notes (due within one year)	\$ 86,890	\$ 1,590	\$ -	\$ 88,480
Commercial notes (due within one through three years)	\$ 137,487	\$ 4,573	\$ (79)	\$ 141,981
Total	<u>\$ 224,377</u>	<u>\$ 6,163</u>	<u>\$ (79)</u>	<u>\$ 230,461</u>

**Fair Value**

	As of December 31, 2020				
	(In thousands)				
	Cost	Realized Gains/(Losses)	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Marketable securities	\$ 85,095	\$ 477	\$ 440	\$ -	\$ 86,012
Total	\$ 85,095	\$ 477	\$ 440	\$ -	\$ 86,012

	As of September 30, 2020				
	(In thousands)				
	Cost	Realized Gains/(Losses)	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Marketable securities	\$ 85,000	\$ 95	\$ -	\$ (75)	\$ 85,020
Total	\$ 85,000	\$ 95	\$ -	\$ (75)	\$ 85,020

Realized gains for marketable securities recorded at fair value consist of dividends received and re-invested into the associated fund.

**NOTE 5. INTANGIBLE ASSETS**

Intangible assets subject to amortization include patents and a license agreement capitalized as part of the Novartis RNAi asset acquisition in March 2015. The license agreement associated with the Novartis RNAi asset acquisition is being amortized over the estimated life remaining at the time of acquisition, which was 21 years, and the accumulated amortization of the asset is \$0.9 million. The patents associated with the Novartis RNAi asset acquisition are being amortized over the estimated life remaining at the time of acquisition, which was 14 years, and the accumulated amortization of the assets is \$9.1 million. Amortization expense for the three months ended December 31, 2020 and 2019 was \$0.4 million and \$0.4 million, respectively. Amortization expense is expected to be \$1.3 million for the remainder of 2021, \$1.7 million in 2022, \$1.7 million in 2023, \$1.7 million in 2024, \$1.7 million in 2025 and \$6.8 million thereafter.

The following table provides details on the Company's intangible asset balances:

	Intangible assets subject to amortization (in thousands)
Balance at September 30, 2020	\$ 15,363
Impairment	-
Amortization	(425)
Balance at December 31, 2020	\$ 14,938

**NOTE 6. STOCKHOLDERS' EQUITY**

At December 31, 2020, the Company had a total of 150,000,000 shares of capital stock authorized for issuance, consisting of 145,000,000 shares of Common Stock, par value \$0.001 per share, and 5,000,000 shares of Preferred Stock, par value \$0.001 per share.

At December 31, 2020, 103,194,240 shares of Common Stock were outstanding. At December 31, 2020, 7,635,023 shares of Common Stock were reserved for issuance upon exercise of options and vesting of restricted stock units granted or available for grant under Arrowhead's 2004 Equity Incentive Plan and 2013 Incentive Plan, as well as for inducement grants made to new employees.

## **NOTE 7. COMMITMENTS AND CONTINGENCIES**

### *Litigation*

From time to time, the Company may be subject to various claims and legal proceedings in the ordinary course of business. If the potential loss from any claim, asserted or unasserted, or legal proceeding is considered probable and the amount is reasonably estimable, the Company will accrue a liability for the estimated loss. There were no contingent liabilities recorded as of the three months ended December 31, 2020.

### *Purchase Commitments*

In the normal course of business, the Company enters into various purchase commitments for the manufacture of drug components, for toxicology studies and for clinical studies. As of December 31, 2020, these future commitments were estimated at approximately \$100.2 million, of which approximately \$85.0 million is expected to be incurred in remaining fiscal year 2021.

### *Technology License Commitments*

The Company has licensed from third parties the rights to use certain technologies for its research and development activities, as well as in any products the Company may develop using these licensed technologies. These agreements and other similar agreements often require milestone and royalty payments. Milestone payments, for example, may be required as the research and development process progresses through various stages of development, such as when clinical candidates enter or progress through clinical trials, upon a new drug application and upon certain sales level milestones. These milestone payments could amount to the mid to upper double-digit millions of dollars. During the three months ended December 31, 2020 and 2019, the Company did not reach any milestones. In certain agreements, the Company may be required to make mid to high single-digit percentage royalty payments based on a percentage of the sales of the relevant products.

## **NOTE 8. LEASES**

### *Leases*

In April 2019, the Company entered into a lease for its corporate headquarters in Pasadena, California. The 91 month office building lease between the Company and 177 Colorado Owner, LLC is for approximately 24,000 square feet of office space located at 177 E. Colorado Blvd, Pasadena, California. The increased capacity of this new office space compared to the Company's prior corporate headquarters will accommodate increased personnel as the Company's pipeline of drug candidates expands and moves closer to market. Lease payments began on September 30, 2019 and are estimated to total approximately \$8.7 million over the term. The lease expires on April 30, 2027. The Company has paid approximately \$3.5 million for leasehold improvements, net of tenant improvement allowances. The lease contains an option to renew for one term of five years. The exercise of this option was not determined to be reasonably certain and thus was not included in lease liabilities on the Company's Consolidated Balance Sheet at December 31, 2020. On October 23, 2020, the Company signed a lease expansion to add an additional approximately 24,000 square feet of office space at the same location for its corporate headquarters. The lease commencement date is expected to be in July 2021, after certain leasehold improvements are completed, and the lease expires in April 2027. The lease payments for the expansion are expected to total \$6.9 million. The Company anticipates paying approximately \$4.0 million of leasehold improvements, net of tenant improvement allowances. The increased capacity of this additional office space compared to the Company's current corporate headquarters will accommodate increased personnel as the Company's pipeline of drug candidates expands and moves closer to market.

In January 2016, the Company entered into a lease for its research facility in Madison, Wisconsin. The lease was for approximately 60,000 square feet of office and laboratory space and had an expiration date of September 30, 2026. The lease was amended in January 2019 and May 2020 to expand the rentable square feet by an additional 40,000 total square feet and extended the lease expiration date to September 30, 2031. Lease payments are estimated to total approximately \$26.2 million for the term. The Company anticipates paying approximately \$11.0 million of leasehold improvements for the additional 40,000 square feet, net of tenant improvement allowances. The lease contains two options to renew for two terms of five years. The exercise of these options were not determined to be reasonably certain and thus was not included in lease liabilities on the Company's Consolidated Balance Sheet at December 31, 2020. In November 2020 and December 2020, two amendments were signed to expand the rentable square space by an additional 10,743 square feet and these amendments added a total of approximately \$1.2 million of lease payments for the remainder of the term.

In March 2020, the Company entered into a sublease agreement (the "Sublease") with Halozyme, Inc. for additional research and development facility space in San Diego, California. The Sublease provides additional space needed to accommodate the recent growth of the Company's personnel and discovery efforts. The sublease is for approximately 21,000 rentable square feet. The term of the Sublease commenced on April 1, 2020 and will end on January 14, 2023. Sublease payments are estimated to total approximately \$2.0 million over the term.

Operating lease cost during the three months ended December 31, 2020 and 2019 was \$0.9 million and \$0.5 million, respectively. Variable lease costs for the three months ended December 31, 2020 and 2019 was \$0.2 million and \$0.2 million, respectively. There was no short-term lease cost during the three months ended December 31, 2020 and 2019.

The following table presents maturities of operating lease liabilities on an undiscounted basis as of December 31, 2020:

	<u>(in thousands)</u>
2021 (remainder of fiscal year)	\$ 2,379
2022	3,853
2023	3,406
2024	3,269
2025	3,358
2026 and thereafter	15,331
<b>Total</b>	<b>\$ 31,596</b>
Less imputed interest	\$ (10,728)
<b>Total operating lease liabilities (includes current portion)</b>	<b>\$ 20,868</b>

Cash paid for the amounts included in the measurement of the operating lease liabilities on the Company's Consolidated Balance Sheet and included in Other changes in operating assets and liabilities within cash flows from operating activities on the Company's Consolidated Statement of Cash Flow for the three months ended December 31, 2020 and 2019 was \$0.7 million and \$0.3 million, respectively. The weighted-average remaining lease term and weighted-average discount rate for all leases as of December 31, 2020 was 9.2 years and 8.4%, respectively.

#### **NOTE 9. STOCK-BASED COMPENSATION**

Arrowhead has two plans that provide for equity-based compensation. Under the 2004 Equity Incentive Plan and the 2013 Incentive Plan, as of December 31, 2020, 509,210 and 5,102,360 shares, respectively, of Arrowhead's Common Stock are reserved for the grant of stock options, stock appreciation rights, restricted stock awards and performance unit/share awards to employees, consultants and others. No further grants may be made under the 2004 Equity Incentive Plan. As of December 31, 2020, there were options granted and outstanding to purchase 509,210 and 2,320,640 shares of Common Stock under the 2004 Equity Incentive Plan and the 2013 Incentive Plan, respectively, and there were 2,385,200 restricted stock units granted and outstanding under the 2013 Incentive Plan. Also, as of December 31, 2020, there were 1,260,503 shares reserved for options and 762,950 shares reserved for restricted stock units issued as inducement grants to new employees outside of equity compensation plans.

The following table summarizes information about stock options:

	<u>Number of Options Outstanding</u>	<u>Weighted- Average Exercise Price Per Share</u>	<u>Weighted- Average Remaining Contractual Term</u>	<u>Aggregate Intrinsic Value</u>
Balance at September 30, 2020	4,539,403	\$ 16.67		
Granted	144,000	63.64		
Cancelled	(55,438)	24.48		
Exercised	(537,612)	9.49		
Balance at December 31, 2020	<u>4,090,353</u>	<u>\$ 19.16</u>	6.3 years	\$ 235,465,861
Exercisable at December 31, 2020	<u>2,556,040</u>	<u>\$ 9.56</u>	4.8 years	\$ 171,695,135

Stock-based compensation expense related to stock options for the three months ended December 31, 2020 and 2019 was \$3.1 million and \$1.6 million, respectively. For non-qualified stock options, the expense creates a timing difference, resulting in a deferred tax asset, which is fully reserved by a valuation allowance.

The grant date fair value of the options granted by the Company for the three months ended December 31, 2020 and 2019 was \$6.8 million and \$8.6 million, respectively.

The intrinsic value of the options exercised during the three months ended December 31, 2020, and 2019 was \$32.0 million and \$21.6 million, respectively.

As of December 31, 2020, the pre-tax compensation expense for all outstanding unvested stock options in the amount of \$39.0 million will be recognized in the Company's results of operations over a weighted average period of 3.1 years.

The fair value of each stock option award is estimated on the date of grant using the Black-Scholes option pricing model. The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options, which do not have vesting restrictions and are fully transferable. The determination of the fair value of each stock option is affected by the Company's stock price on the date of grant, as well as assumptions regarding a number of highly complex and subjective variables. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

The assumptions used to value stock options are as follows:

	<b>Three Months Ended December 31,</b>	
	<b>2020</b>	<b>2019</b>
Dividend yield	-	-
Risk-free interest rate	0.4 – 0.6%	1.4 - 1.8%
Volatility	90.0-90.4%	90.5-91.0%
Expected life (in years)	6.25	6.25
Weighted average grant date fair value per share of options granted	\$ 47.34	\$ 39.05

The dividend yield is zero as the Company currently does not pay a dividend.

The risk-free interest rate is based on that of the U.S. Treasury bond.

Volatility is estimated based on volatility average of the Company's Common Stock price.

#### *Restricted Stock Units*

Restricted stock units ("RSUs"), including time-based and performance-based awards, were granted under the Company's 2013 Incentive Plan and as inducements grants granted outside of the Plan. During the three months ended December 31, 2020, the Company issued 2,200 RSUs under the 2013 Incentive Plan and 116,000 RSUs as inducement awards. At vesting, each outstanding RSU will be exchanged for one share of the Company's Common Stock. RSU recipients may elect to net share settle upon vesting, in which case the Company pays the employee's income taxes due upon vesting and withholds a number of shares of Common Stock of equal value. RSU awards generally vest subject to the satisfaction of service requirements or the satisfaction of both service requirements and achievement of certain performance targets.

The following table summarizes the activity of the Company's RSUs:

	<b>Number of RSUs</b>	<b>Weighted- Average Grant Date Fair Value</b>
Unvested at September 30, 2020	3,524,025	\$ 44.11
Granted	118,200	62.26
Vested	(280,325)	22.92
Forfeited	(213,750)	41.34
Unvested at December 31, 2020	<u>3,148,150</u>	<u>\$ 46.87</u>

During the three months ended December 31, 2020 and 2019, the Company recorded \$5.0 million and \$2.9 million of expense related to RSUs, respectively. Such expense is included in stock-based compensation expense in the Company's Consolidated Statement of Operations and Comprehensive Income (Loss). For RSUs, the expense creates a timing difference, resulting in a deferred tax asset, which is fully reserved by a valuation allowance.

For RSUs, the grant date fair value of the award is based on the Company's closing stock price at the grant date, with consideration given to the probability of achieving performance conditions for performance-based awards.

As of December 31, 2020, the pre-tax compensation expense for all unvested RSUs in the amount of \$82.0 million will be recognized in the Company's results of operations over a weighted average period of 3.0 years. Unvested RSUs that we have deemed not probable of vesting as of December 31, 2020, have the potential of generating an additional \$38.1 million of pre-tax compensation expense if we deem them probable of vesting in a future reporting period.

#### NOTE 10. FAIR VALUE MEASUREMENTS

The Company measures its financial assets and liabilities at fair value. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (i.e., exit price) in an orderly transaction between market participants at the measurement date. Additionally, the Company is required to provide disclosure and categorize assets and liabilities measured at fair value into one of three different levels depending on the assumptions (i.e., inputs) used in the valuation. Level 1 provides the most reliable measure of fair value while Level 3 generally requires significant management judgment. Financial assets and liabilities are classified in their entirety based on the lowest level of input significant to the fair value measurement. The fair value hierarchy is defined as follows:

Level 1—Valuations are based on unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2—Valuations are based on quoted prices for similar assets or liabilities in active markets, or quoted prices in markets that are not active for which significant inputs are observable, either directly or indirectly.

Level 3—Valuations are based on prices or valuation techniques that require inputs that are both unobservable and significant to the overall fair value measurement. Inputs reflect management's best estimate of what market participants would use in valuing the asset or liability at the measurement date.

The following table summarizes fair value measurements at December 31, 2020 and September 30, 2020 for assets and liabilities measured at fair value on a recurring basis.

December 31, 2020:

	Level 1	Level 2	Level 3	Total
	(in thousands)			
Cash and cash equivalents	\$ 139,921	\$ -	\$ -	\$ 139,921
Marketable securities	\$ 86,012	\$ -	\$ -	\$ 86,012
Short-term investments (held to maturity)	\$ -	\$ 80,597	\$ -	\$ 80,597
Long-term investments (held to maturity)	\$ -	\$ 114,466	\$ -	\$ 114,466
Contingent consideration	\$ -	\$ -	\$ -	\$ -

September 30, 2020:

	Level 1	Level 2	Level 3	Total
	(in thousands)			
Cash and cash equivalents	\$ 143,583	\$ -	\$ -	\$ 143,583
Marketable securities	\$ 85,020	\$ -	\$ -	\$ 85,020
Short-term investments (held to maturity)	\$ -	\$ 88,480	\$ -	\$ 88,480
Long-term investments (held to maturity)	\$ -	\$ 141,981	\$ -	\$ 141,981
Contingent consideration	\$ -	\$ -	\$ -	\$ -



## ITEM 2. MANAGEMENT’S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This Quarterly Report on Form 10-Q contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, and we intend that such forward-looking statements be subject to the safe harbors created thereby. For this purpose, any statements contained in this Quarterly Report on Form 10-Q except for historical information may be deemed to be forward-looking statements. Without limiting the generality of the foregoing, words such as “may,” “will,” “expect,” “believe,” “anticipate,” “intend,” “plan,” “project,” “could,” “estimate,” or “continue” or the negative or other variations thereof or comparable terminology are intended to identify forward-looking statements. In addition, any statements that refer to projections of our future financial performance, trends in our businesses, or other characterizations of future events or circumstances are forward-looking statements.

The forward-looking statements included herein are based on current expectations of our management based on available information and involve a number of risks and uncertainties, all of which are difficult or impossible to predict accurately and many of which are beyond our control. In addition, many of these risks and uncertainties may be exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. As such, our actual results may differ materially from those expressed in any forward-looking statements. Readers should carefully review the factors identified in our most recent Annual Report on Form 10-K under the caption “Risk Factors” as well as the additional risks described in other documents we file from time to time with the Securities and Exchange Commission (“SEC”), including this Quarterly Report on Form 10-Q and subsequent quarterly reports on Form 10-Q. In light of the significant risks and uncertainties inherent in the forward-looking information included herein, the inclusion of such information should not be regarded as a representation by us or any other person that such results will be achieved, and readers are cautioned not to place undue reliance on such forward-looking information. Except as may be required by law, we disclaim any intent to revise the forward-looking statements contained herein to reflect events or circumstances after the date hereof or to reflect the occurrence of unanticipated events.

### Description of Business

Unless otherwise noted, (1) the term “Arrowhead” refers to Arrowhead Pharmaceuticals, Inc., a Delaware corporation and its Subsidiaries, (2) the terms “Company,” “we,” “us,” and “our,” refer to the ongoing business operations of Arrowhead and its Subsidiaries, whether conducted through Arrowhead or a subsidiary of Arrowhead, (3) the term “Subsidiaries” refers to Arrowhead Madison Inc. (“Arrowhead Madison”) and Arrowhead Australia Pty Ltd (“Arrowhead Australia”), (4) the term “Common Stock” refers to Arrowhead’s Common Stock, (5) the term “Preferred Stock” refers to Arrowhead’s Preferred Stock and (6) the term “Stockholder(s)” refers to the holders of Arrowhead Common Stock.

### Overview

Arrowhead Pharmaceuticals, Inc. develops medicines that treat intractable diseases by silencing the genes that cause them. Using a broad portfolio of RNA chemistries and efficient modes of delivery, Arrowhead therapies trigger the RNA interference mechanism to induce rapid, deep and durable knockdown of target genes. RNA interference (“RNAi”) is a mechanism present in living cells that inhibits the expression of a specific gene, thereby affecting the production of a specific protein. Arrowhead’s RNAi-based therapeutics leverage this natural pathway of gene silencing. The Company’s pipeline includes ARO-APOC3 for hypertriglyceridemia, ARO-ANG3 for dyslipidemia, ARO-HSD for liver disease, ARO-ENaC for cystic fibrosis, ARO-HIF2 for renal cell carcinoma, ARO-LUNG2 as a candidate to treat chronic obstructive pulmonary disorder (“COPD”) and ARO-COV for treatment for the current novel coronavirus that causes COVID-19 and other possible future pulmonary-borne pathogens. ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 are being developed for undisclosed liver-expressed targets under a collaboration agreement with Janssen Pharmaceuticals, Inc. (“Janssen”). ARO-AAT for liver disease associated with alpha-1 antitrypsin deficiency (“AATD”) was out-licensed to Takeda Pharmaceuticals U.S.A., Inc. (“Takeda”) in October 2020. JNJ3989 (formerly referred to as ARO-HBV) for chronic hepatitis B virus was out-licensed to Janssen in October 2018. Olpasiran (formerly referred to as AMG 890 or ARO-LPA) for cardiovascular disease was out-licensed to Amgen Inc. (“Amgen”) in 2016.

Arrowhead operates lab facilities in Madison, Wisconsin and San Diego, California, where the Company’s research and development activities, including the development of RNAi therapeutics, are based. The Company’s principal executive offices are located in Pasadena, California.

Arrowhead has focused its resources on therapeutics that exclusively utilize the Company’s Targeted RNAi Molecule (TRiM™) platform technology. Therapeutics built on the TRiM™ platform have demonstrated high levels of pharmacologic activity in multiple animal models spanning several therapeutic areas. TRiM™ enabled therapeutics offer several potential advantages over prior generation and competing technologies, including: simplified manufacturing and reduced costs; multiple routes of administration including subcutaneous injection and inhaled administration; the ability to target multiple tissue types including liver, lung and tumors; and the potential for improved safety and reduced risk of intracellular buildup, because there are less metabolites from smaller, simpler molecules.

During the first quarter of fiscal year 2021, the Company continued to develop its pipeline and partnered candidates. The Company hosted a key opinion leader webinar on its cardiometabolic candidates, ARO-APOC3 and ARO-ANG3. The Company presented positive interim clinical data from AROAAT2002, an open-label Phase 2 clinical study of ARO-AAT, the Company's second-generation investigational RNAi therapeutic being developed as a treatment for the rare genetic liver disease associated with AATD. The Company also announced positive clinical data on its cardiometabolic candidates, ARO-APOC3 and ARO-ANG3, at the American Heart Association ("AHA") Scientific Session 2020. Finally, the Company announced a collaboration with Takeda to co-develop and co-commercialize ARO-AAT for alpha-1 antitrypsin-associated liver disease. See Note 2 of the Notes to Consolidated Financial Statements included elsewhere in this Quarterly Report on Form 10-Q for more information regarding the collaboration with Takeda.

The Company's partnered candidates under its collaboration agreements also continue to progress. Janssen began dosing patients in a Phase 2b triple combination study called REEF-1, designed to enroll up to 450 patients with chronic hepatitis B infection. In connection with the start of this study, Arrowhead earned a \$25.0 million milestone payment under the Company's License Agreement with Janssen ("Janssen License Agreement"). The Company is currently performing discovery, optimization and preclinical research and development for ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 for Janssen as part of the Company's Research Collaboration and Option Agreement with Janssen ("Janssen Collaboration Agreement"). Under the terms of the Janssen agreements taken together, the Company has received \$175.0 million as an upfront payment, \$75.0 million in the form of an equity investment by Johnson & Johnson Innovation-JJDC, Inc. ("JJDC") in Arrowhead Common Stock, two \$25.0 million milestone payments and may receive up to \$1.6 billion in development and sales milestones payments for the Janssen License Agreement, and up to \$1.9 billion in development and sales milestone payments for the three additional targets covered under the Janssen Collaboration Agreement. The Company is further eligible to receive tiered royalties on product sales up to mid-teens under the Janssen License Agreement and up to low teens under the Janssen Collaboration Agreement.

The Company's collaboration agreement with Amgen for Olpasiran (previously referred to as AMG 890 or ARO-LPA), (the "Second Collaboration and License Agreement" or "Olpasiran Agreement") continues to progress. In July 2020, Amgen initiated a Phase 2 clinical study, which resulted in a \$20.0 million milestone payment to the Company. The Company has received \$35.0 million in upfront payments, \$21.5 million in the form of an equity investment by Amgen in the Company's Common Stock, \$30.0 million in milestone payments, and may receive up to an additional \$400.0 million in remaining development, regulatory and sales milestone payments. The Company is eligible to receive up to low double-digit royalties for sales of products under the Olpasiran Agreement.

On October 7, 2020, the Company entered into an Exclusive License and Co-Funding Agreement with Takeda (the "Takeda License Agreement"). Under the Takeda License Agreement, Takeda and the Company will co-develop the Company's ARO-AAT program. Within the United States, ARO-AAT, if approved, will be co-commercialized under a 50/50 profit sharing structure. Outside the United States, Takeda will lead the global commercialization strategy and receive an exclusive license to commercialize ARO-AAT with the Company eligible to receive tiered royalties of 20% to 25% on net sales. In January 2021, the Company received \$300.0 million as an upfront payment and is eligible to receive potential development, regulatory and commercial milestones of up to \$740.0 million.

The revenue recognition for these collaboration agreements is discussed further in Note 2 of the Notes to Consolidated Financial Statements of Part I, Item 1. *Financial Statements* of this Quarterly Report on Form 10-Q.

The Company continues to develop other clinical candidates for future clinical trials. Clinical candidates are tested internally and through GLP toxicology studies at outside laboratories. Drug materials for such studies and clinical trials are either contracted to third-party manufactures or manufactured internally. The Company engages third-party contract research organizations ("CROs") to manage clinical trials and works cooperatively with such organizations on all aspects of clinical trial management, including plan design, patient recruiting, and follow up. These outside costs, relating to the preparation for and administration of clinical trials, are referred to as "candidate costs." If the clinical candidates progress through human testing, candidate costs will increase.

The Company is actively monitoring the ongoing COVID-19 pandemic. The financial results for the three months ended December 31, 2020 were not significantly impacted by COVID-19. During fiscal year 2020, the Company had temporarily paused enrollment in its two ARO-AAT studies, SEQUOIA and the ARO-AAT 2002 study, but resumed the process of screening and enrolling patients. During the pause in enrollment, patients already enrolled in these studies continued to be dosed per protocol and continued to come in for their follow up visits. Additional delays have occurred in the Company's earlier stage programs, but the Company does not expect a material impact to any program's anticipated timelines. Additionally, the Company's operations at its research and development facilities in Madison, Wisconsin and San Diego, California, and its corporate headquarters in Pasadena, California have continued to operate with limited impact, other than for enhanced safety measures, including work from home policies. However, the Company cannot predict the impact the progression of COVID-19 will have on future financial results due to a variety of factors including the ability of the Company's clinical sites to continue to enroll subjects, the ability of the Company's suppliers to continue to operate, the continued good health and safety of the Company's employees, and ultimately the length of the COVID-19 pandemic.

Net losses were \$20.7 million for the three months ended December 31, 2020 as compared to net losses of \$2.7 million for the three months ended December 30, 2019. Net losses per share-diluted were \$0.20 for the three months ended December 31, 2020 as compared to net losses per share-diluted of \$0.03 for the three months ended December 31, 2019. An increase in research and development and general and administrative expenses coupled with a decrease in revenue from the license and collaboration agreements with Janssen were the drivers of the increase in net losses and net losses per share for the three months ended December 31, 2020, as discussed further below.

The Company has strengthened its liquidity and financial position through upfront and milestone payments received under its collaboration agreements, as well as equity financings. Under the terms of the Company's agreements with Janssen taken together, the Company has received \$175.0 million as an upfront payment, \$75.0 million in the form of an equity investment by JJDC in Arrowhead Common Stock and two \$25.0 million milestone payments. Under the terms of the Company's agreements with Amgen, the Company has received \$35.0 million in upfront payments, \$21.5 million in the form of an equity investment by Amgen in the Company's Common Stock and \$30.0 million in milestone payments. The Company's October 2020 licensing agreement with Takeda will result in a \$300.0 million upfront payment, which has been collected in the beginning of the second quarter of 2021. Additionally, in December 2019, the Company completed a securities offering which generated approximately \$250.5 million in net cash proceeds. These cash proceeds secure the funding needed to continue to advance our pipeline candidates. The Company had \$139.9 million of cash and cash equivalents, \$86.0 million of marketable securities, \$79.4 million in short-term investments, \$110.9 million of long term investments and \$499.3 million of total assets as of December 31, 2020, as compared to \$143.6 million, \$85.0 million, \$86.9 million, \$137.5 million and \$522.5 million as of September 30, 2020, respectively. Based upon the Company's current cash and investment resources and operating plan, the Company expects to have sufficient liquidity to fund operations for at least the next twelve months.

### **Critical Accounting Policies and Estimates**

There have been no changes to the significant accounting policies disclosed in the Company's most recent Annual Report on Form 10-K.

### **Results of Operations**

The following data summarizes our results of operations for the following periods indicated:

	Three Months Ended December 31,	
	2020	2019
	(in thousands, except per share amounts)	
Revenues	\$ 21,303	\$ 29,455
Operating Income (loss)	\$ (24,054)	\$ (4,853)
Net Income (loss)	\$ (20,732)	\$ (2,673)
Net Income (Loss) per Share- Diluted	\$ (0.20)	\$ (0.03)

The decrease in revenue for the three months ended December 31, 2020 compared to the three months ended December 31, 2019 was driven by the timing of the recognition of the \$252.6 million initial transaction price associated with our agreements with Janssen and JJDC as we achieved progress toward completing our performance obligation under those agreements; partially offset by the revenue recognized for the Takeda collaboration. The increase in Net Losses during the three months ended December 31, 2020 compared to the three months ended December 31, 2019 was driven by this decrease in Revenue and also increases in Research and Development Expenses as our pipeline of clinical candidates has continued to increase.

### **Revenue**

Total revenue for the three months ended December 31, 2020 and 2019 was \$21.3 million and \$29.5 million, respectively. Revenue in the current period is primarily related to the recognition of a portion of the \$252.6 million initial transaction price associated with our agreements with Janssen and JJDC as we achieved progress towards completing our performance obligation under those agreements. In addition, revenue in the current period consisted of \$8.2 million of revenue associated with the Takeda collaboration. Revenue for the three months ended December 31, 2019, was primarily related to the recognition of a portion of the \$252.6 million initial transaction price associated with our agreements with Janssen and JJDC. A higher proportion of performance activity was ongoing during the prior period than the current period, which resulted in the higher revenue recognized in the prior period.

## *Amgen Inc.*

On September 28, 2016, the Company entered into two Collaboration and License Agreements and a Common Stock Purchase Agreement with Amgen. Under one of the collaboration and license agreements (the “Second Collaboration and License Agreement” or “Olpasiran Agreement”), Amgen has received a worldwide, exclusive license to Arrowhead’s novel, RNAi Olpasiran (previously referred to as AMG 890 or ARO-LPA) program. These RNAi molecules are designed to reduce elevated lipoprotein(a), which is a genetically validated, independent risk factor for atherosclerotic cardiovascular disease. Under the other collaboration and license agreement (the “First Collaboration and License Agreement” or the “ARO-AMG1 Agreement”), Amgen received an option to a worldwide, exclusive license for ARO-AMG1, an RNAi therapy for an undisclosed genetically validated cardiovascular target. In both agreements, Amgen is wholly responsible for clinical development and commercialization. Under the terms of the agreements taken together, the Company has received \$35.0 million in upfront payments, \$21.5 million in the form of an equity investment by Amgen in the Company’s Common Stock, and \$30.0 million in milestone payments, and may receive up to an additional \$400.0 million in remaining development, regulatory and sales milestone payments. The Company is further eligible to receive up to low double-digit royalties for sales of products under the Olpasiran Agreement. In July 2019, Amgen informed the Company that it would not be exercising its option for an exclusive license for ARO-AMG1, and as such, there will be no further milestone or royalty payments under the ARO-AMG1 Agreement.

The Company substantially completed its performance obligations under the Olpasiran Agreement and the ARO-AMG1 Agreement. Future milestones and royalties achieved will be recognized in their entirety when earned. In July 2020, Amgen initiated a Phase 2 clinical study, which resulted in a \$20.0 million milestone payment to the Company. During the three months ended December 31, 2020 and 2019, the Company recognized \$0 and \$0, respectively. As of December 31, 2020, there were \$0 in contract assets recorded as accounts receivable and \$0 contract liabilities recorded as current deferred revenue on the Company’s Consolidated Balance Sheets.

## *Janssen Pharmaceuticals, Inc.*

On October 3, 2018, the Company entered into the Janssen License Agreement and the Janssen Collaboration Agreement with Janssen, part of the Janssen Pharmaceutical Companies of Johnson & Johnson. The Company also entered into a Stock Purchase Agreement (“JJDC Stock Purchase Agreement”) with JJDC. Under the Janssen License Agreement, Janssen has received a worldwide, exclusive license to the Company’s JNJ-3989 (ARO-HBV) program, the Company’s third-generation subcutaneously administered RNAi therapeutic candidate being developed as a potential therapy for patients with chronic hepatitis B virus infection. Beyond the Company’s Phase 1/2 study of JNJ-3989 (ARO-HBV), Janssen is also wholly responsible for clinical development and commercialization of JNJ-3989. Under the Janssen Collaboration Agreement, Janssen will be able to select three new targets against which Arrowhead will develop clinical candidates. These candidates are subject to certain restrictions and do not include candidates that already were in the Company’s pipeline. The Company will perform discovery, optimization and preclinical research and development, entirely funded by Janssen, which on its own or in combination with Janssen development work, is sufficient to allow the filing of a U.S. Investigational New Drug application or equivalent, at which time Janssen will have the option to take an exclusive license. If the option is exercised, Janssen will be wholly responsible for clinical development and commercialization of each optioned candidate. Under the terms of the agreements taken together, the Company has received \$175.0 million as an upfront payment, \$75.0 million in the form of an equity investment by JJDC in Arrowhead Common Stock under the JJDC Stock Purchase Agreement, and two \$25.0 million milestone payments, and may receive up to \$1.6 billion in development and sales milestones payments for the Janssen License Agreement, and up to \$1.9 billion in development and sales milestone payments for the three additional targets covered under the Janssen Collaboration Agreement. The Company is further eligible to receive tiered royalties up to mid-teens under the Janssen License Agreement and up to low teens under the Janssen Collaboration Agreement on product sales.

The Company has evaluated these agreements in accordance with the new revenue recognition standard that became effective for the Company on October 1, 2018. The adoption of the new revenue standard did not have a material impact on the balances reported when evaluated under the superseded revenue standard. At the inception of these agreements, the Company has identified one distinct performance obligation. Regarding the Janssen License Agreement, the Company determined that the key deliverables included the license and certain R&D services including the Company’s responsibility to complete the Phase 1/2 study of JNJ-3989 (ARO-HBV) and the Company’s responsibility to ensure certain manufacturing of JNJ-3989 (ARO-HBV) drug product is completed and delivered to Janssen (the “Janssen R&D Services”). Due to the specialized and unique nature of these Janssen R&D Services, and their direct relationship with the license, the Company determined that these deliverables represent one distinct bundle and thus, one performance obligation. The Company also determined that Janssen’s option to require the Company to develop up to three new targets is not a material right, and thus, not a performance obligation at the onset of the agreement. The consideration for this option is accounted for separately.

The Company determined the transaction price totaled approximately \$252.6 million which includes the upfront payment, the premium paid by JJDC for its equity investment in the Company, the two \$25.0 million milestone payments earned and estimated payments for reimbursable Janssen R&D services to be performed. The Company has allocated the total \$252.6 million initial transaction price to its one distinct performance obligation for the JNJ-3989 (ARO-HBV) license and the associated Janssen R&D Services. This revenue will be recognized using a proportional performance method (based on actual costs incurred versus total estimated costs incurred) beginning in October 2018 and ending as the Company's efforts in overseeing the Phase 1/2 clinical trial are completed. During the three months ended December 31, 2020 and 2019, the Company recognized approximately \$12.7 million and \$28.8 million of Revenue associated with this performance obligation, respectively. As of December 31, 2020, there were \$0 in contract assets recorded as accounts receivable, and \$6.7 million of contract liabilities recorded as current deferred revenue on the Company's Consolidated Balance Sheets. The \$6.7 million of current deferred revenue is driven by the upfront payment, the premium paid by JJDC for its equity investment in the Company, and the two \$25.0 million milestone payments earned, net of revenue recognized to date.

The Company has begun to conduct its discovery, optimization and preclinical research and development of ARO-JNJ1, ARO-JNJ2 and ARO-JNJ3 under the Janssen Collaboration Agreement. All costs and labor hours spent by the Company will be entirely funded by Janssen. During the three months ended December 31, 2020 and 2019, the Company recognized \$0.3 million and \$0.7 million of Revenue associated with these efforts, respectively. As of December 31, 2020, there were \$0.8 million of contract assets recorded as accounts receivable and \$0 of contract liabilities recorded as current deferred revenue on the Company's Consolidated Balance Sheets.

#### *Takeda Pharmaceuticals U.S.A., Inc.*

On October 7, 2020, the Company entered into Takeda License Agreement with Takeda. Under the Takeda License Agreement, Takeda and the Company will co-develop the Company's ARO-AAT program, the Company's second-generation subcutaneously administered RNAi therapeutic candidate being developed as a treatment for liver disease associated with alpha-1 antitrypsin deficiency. Within the United States, ARO-AAT, if approved, will be co-commercialized under a 50/50 profit sharing structure. Outside the United States, Takeda will lead the global commercialization strategy and receive an exclusive license to commercialize ARO-AAT with the Company eligible to receive tiered royalties of 20% to 25% on net sales. In January 2021, the Company received \$300.0 million as an upfront payment and is eligible to receive potential development, regulatory and commercial milestones of up to \$740.0 million.

The Company has evaluated the Takeda License Agreement in accordance with the new revenue recognition requirements that became effective for the Company on October 1, 2018. The adoption of the new revenue standard will not have a material impact on the balances reported when evaluated under the superseded revenue standard. At the inception of the Takeda License Agreement, the Company has identified one distinct performance obligation. The Company determined that the key deliverables included the license and certain R&D services including the Company's responsibilities to complete the initial portion of the SEQUOIA study, to complete the ongoing Phase 2 AROAAT2002 study and to ensure certain manufacturing of ARO-AAT drug product is completed and delivered to Takeda (the "Takeda R&D Services"). Due to the specialized and unique nature of these Takeda R&D services, and their direct relationship with the license, the Company determined that these deliverables represent one distinct bundle and thus, one performance obligation. Beyond the Takeda R&D Services, Takeda will be responsible for managing future clinical development and commercialization. The Company will co-fund certain of the development and commercialization costs that Takeda manages, and these co-funding amounts will be offset against amounts owed to Arrowhead, either from milestones or royalties earned, or profits earned under the 50/50 profit sharing structure for U.S. commercialization.

The Company determined the initial transaction price totaled approximately \$300.0 million, which includes the upfront payment. The Company will exclude any future estimated milestones, royalties, or profit-sharing payments from this transaction price to date. The Company will allocate the total \$300.0 million initial transaction price to its one distinct performance obligation for the ARO-AAT license and the associated Takeda R&D Services. Revenue will be recognized using a proportional performance method (based on actual costs incurred versus total estimated costs incurred for the Takeda R&D Services). Revenue for the three months ended December 31, 2020 and 2019 were \$8.2 million and \$0, respectively. As of December 31, 2020, there were \$8.2 million in contract assets recorded as accounts receivable.

#### **Operating Expenses**

The analysis below details the operating expenses and discusses the expenditures of the Company within the major expense categories. Certain reclassifications have been made to prior-period operating expense categories to conform to the current period presentation. For purposes of comparison, the amounts for the three months ended December 31, 2020 and 2019 are shown in the tables below.

## Research and Development Expenses

R&D expenses are related to the Company's research and development efforts, and related program costs which are comprised primarily of outsourced costs related to the manufacturing of clinical supplies, toxicity/efficacy studies and clinical trial expenses. Internal costs primarily relate to operations at our research facilities in Madison, Wisconsin and San Diego, California, including facility costs and laboratory-related expenses. Salaries and stock compensation expense consist of salary, bonuses, payroll taxes and related benefits and stock compensation for our R&D personnel. Depreciation and amortization expense relates to depreciation on lab equipment and leasehold improvements at our research facilities. The following table provides details of research and development expenses for the periods indicated:

(table below in thousands)

	Three Months Ended	% of Expense	Three Months Ended	% of Expense	Increase (Decrease)	
	December 31, 2020	Category	December 31, 2019	Category	\$	%
Salaries	\$ 8,173	22%	\$ 4,096	18%	\$ 4,077	100%
Facilities related	1,478	4%	620	3%	858	138%
Candidate costs	15,017	41%	13,430	58%	1,587	12%
R&D discovery costs	4,711	13%	2,955	13%	1,756	59%
Total research and development expense, excluding non-cash expense	<b>29,379</b>	<b>80%</b>	<b>21,101</b>	<b>90%</b>	<b>8,278</b>	<b>39%</b>
Stock compensation	5,486	15%	1,162	5%	4,324	372%
Depreciation/amortization	1,690	5%	1,111	5%	579	52%
Total research and development expense	<b>\$ 36,555</b>	<b>100%</b>	<b>\$ 23,374</b>	<b>100%</b>	<b>\$ 13,181</b>	<b>56%</b>

Salaries expense increased by \$4,077,000 from \$4,096,000 during the three months ended December 31, 2019 to \$8,173,000 during the current period. This increase is primarily due to an increase in R&D headcount that has occurred as the Company has expanded its pipeline of candidates.

Facilities expense increased by \$858,000 from \$620,000 during the three months ended December 31, 2019 to \$1,478,000 during the current period. This category includes rental costs for our research and development facilities in Madison, Wisconsin and San Diego, California. This increase is primarily due the commencement of our sublease in San Diego, California in April 2020.

Candidate costs increased by \$1,587,000 from \$13,430,000 during the three months ended December 31, 2019 to \$15,017,000 during the current period. This increase is primarily due to the progression of our pipeline candidates into and through clinical trials, which results in higher outsourced clinical trial, toxicity study and manufacturing costs. We anticipate these expenses to continue to increase as our pipeline of candidates grows and progresses to later phase clinical trials.

R&D discovery costs increased by \$1,756,000 from \$2,955,000 during the three months ended December 31, 2019 to \$4,711,000 in the current period. This increase is due to the growth of our discovery efforts, including the addition of our research facility in San Diego. We anticipate this expense to continue to increase as we increase headcount to support our discovery efforts to identify new drug candidates.

Stock compensation expense, a non-cash expense, increased by \$4,324,000 from \$1,162,000 during the three months ended December 31, 2019 to \$5,486,000 during the current period. Stock compensation expense is based upon the valuation of stock options and restricted stock units granted to employees, directors and certain consultants. Many variables affect the amount expensed, including the Company's stock price on the date of the grant, as well as other assumptions. The increase in the expense in the current period is primarily due to the increased headcount discussed above and a mix of higher grant date fair values of awards amortizing during the current period due to the Company's stock price at the time of the grants.

Depreciation and amortization expense, a non-cash expense, increased by \$579,000 from \$1,111,000 during the three months ended December 31, 2019 to \$1,690,000 during the current period. The majority of depreciation and amortization expense relates to depreciation on lab equipment and leasehold improvements at our Madison research facility.

## General & Administrative Expenses

The following table provides details of our general and administrative expenses for the periods indicated:

(table below in thousands)

	Three Months Ended	% of Expense	Three Months Ended	% of Expense	Increase (Decrease)	
	December 31, 2020	Category	December 31, 2019	Category	\$	%
Salaries	\$ 2,584	29%	\$ 4,081	37%	\$ (1,497)	-37%
Professional/outside services	1,982	23%	1,822	17%	160	9%
Facilities related	730	8%	793	7%	(63)	-8%
Other G&A	694	8%	760	7%	(66)	-9%
Total general & administrative expense, excluding non-cash expense	<b>5,990</b>	<b>68%</b>	<b>7,456</b>	<b>1</b>	<b>(1,466)</b>	<b>-45%</b>
Stock compensation	2,658	30%	3,330	31%	(672)	-20%
Depreciation/amortization	154	2%	148	1%	6	4%
Total general & administrative expense	<b>\$ 8,802</b>	<b>100%</b>	<b>\$ 10,934</b>	<b>100%</b>	<b>\$ (2,132)</b>	<b>-61%</b>

Salaries expense decreased by \$1,497,000 from \$4,081,000 during the three months ended December 31, 2019 to \$2,584,000 during the current period. The decrease is primarily due to higher annual performance bonuses awarded in December 2019. We expect salaries expense to increase as our headcount continues to increase to help support our expanding clinical pipeline.

Professional/outside services include legal, accounting, consulting, patent expenses, business insurance expenses and other outside services retained by the Company. Professional/outside services expense increased by \$160,000 from \$1,822,000 during the three months ended December 31, 2019 to \$1,982,000 during the current period. The increase is primarily related to certain patent-related expenses.

Facilities-related expense decreased by \$63,000 from \$793,000 during the three months ended December 31, 2019 to \$730,000 during the current period. This category primarily includes rental costs for our corporate headquarters in Pasadena, California. The decrease in the expense in the current period is primarily related to the moving costs we incurred in the three months ended December 31, 2019 to move to our new corporate headquarters.

Other G&A expense decreased by \$66,000 from \$760,000 during the three months ended December 31, 2019 to \$694,000 during the current period. This category consists primarily of travel, communication and technology, office expenses, and franchise and property tax expenses. The decrease in the expense was due to decreased travel expenses.

Stock compensation expense, a non-cash expense, decreased by \$672,000 from \$3,330,000 during the three months ended December 31, 2019 to \$2,658,000 during the current period. Stock compensation expense is based upon the valuation of stock options and restricted stock units granted to employees, directors and certain consultants. Many variables affect the amount expensed, including the Company's stock price on the date of the grant, as well as other assumptions. We expect future stock compensation expense to increase as our headcount continues to increase to help support our clinical pipeline.

Depreciation and amortization expense, a noncash expense, increased by \$6,000 from \$148,000 during the three months ended December 31, 2019 to \$154,000 during the current period. The increase is primarily related to amortization of leasehold improvements for our new corporate headquarters.

## Other Income/Expense

Other income/expense was income of \$2,180,000 during the three months ended December 31, 2019 compared to income of \$3,322,000 during the current period. Other income is primarily related to interest income and gain/loss on our marketable securities. The increase in other income is consistent with the increase in our investment holdings.

## Liquidity and Capital Resources

Arrowhead has historically financed its operations through the sale of its equity securities. Research and development activities have required significant capital investment since the Company's inception and are expected to continue to require significant cash expenditure in the future.

At December 31, 2020, the Company had cash on hand of approximately \$139.9 million as compared to \$143.6 million at September 30, 2020. Cash invested in short-term fixed income securities and marketable securities was \$165.4 million at December 31, 2020, compared to \$171.9 million at September 30, 2020. Cash invested in long-term fixed income securities was \$110.9 million at December 31, 2020, compared to \$137.5 million at September 30, 2020. The Company also entered into an Open Market Sale Agreement (the "ATM agreement"), pursuant to which the Company may, from time to time, sell up to \$250,000,000 in shares of the Company's common stock through Jefferies LLC. As of December 31, 2020, no shares have been issued under the ATM agreement. The Company believes its current financial resources are sufficient to fund its operations through at least the next twelve months.

A summary of cash flows for the three months ended December 31, 2020 and 2019 is as follows:

	<u>Three Months Ended</u> <u>December 31, 2020</u>	<u>Three Months Ended</u> <u>December 31, 2019</u>
	(in thousands)	
Cash Flow from:		
Operating Activities	-38,922	-23,530
Investing Activities	30,158	9,280
Financing Activities	5,102	253,478
Net Increase (decrease) in cash and cash equivalents	-3,662	239,228
Cash and cash equivalents at beginning of period	143,583	221,804
Cash and cash equivalents at end of period	<u>139,921</u>	<u>461,032</u>

During the three months ended December 31, 2020, the Company used \$38.9 million in cash from operating activities, which was primarily related to the ongoing expenses of the Company's research and development programs and general and administrative expenses. Cash provided in investing activities was \$30.2 million, which was primarily related to the sale of marketable securities of \$34.4 million, partially offset by the purchase of property and equipment of \$4.3 million. Cash provided by financing activities of \$5.1 million was related to cash received from stock option exercises.

During the three months ended December 31, 2019, the Company used \$23.5 million in cash from operating activities, which was primarily related to the ongoing expenses of the Company's research and development programs and general and administrative expenses. Cash provided by investing activities was \$9.3 million, which was primarily related to maturities of fixed-income investments of \$13.6 million, partially offset by capital expenditures of \$4.3 million. Cash provided by financing activities of \$253.5 million was driven by the securities financing in December 2019, which generated \$250.5 million in net cash proceeds, as well as \$3.0 million in cash received from stock option exercises.

### Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements.



**ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

There has been no material change in our exposure to market risk from that described in Item 7A of our Annual Report on Form 10-K for the year ended September 30, 2020.

**ITEM 4. CONTROLS AND PROCEDURES**

Our Chief Executive Officer and our Chief Financial Officer, after evaluating our “disclosure controls and procedures” (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of the end of the period covered by this Quarterly Report on Form 10-Q (the “Evaluation Date”), have concluded that, as of the Evaluation Date, our disclosure controls and procedures are effective to ensure that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and to ensure that information required to be disclosed by us in such reports is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer where appropriate, to allow timely decisions regarding required disclosure.

No change in the Company’s internal controls over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act) occurred during the Company’s most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

## PART II—OTHER INFORMATION

### ITEM 1. LEGAL PROCEEDINGS

From time to time, we may be involved in routine legal proceedings, as well as demands, claims and threatened litigation, which arise in the normal course of our business. Litigation can be expensive and disruptive to normal business operations. Moreover, the results of legal proceedings, particularly complex legal proceedings, cannot be predicted with any certainty. We disclosed information about certain of our legal proceedings in Part I, Item 3 of our Annual Report on Form 10-K for the year ended September 30, 2020.

### ITEM 1A. Risk Factors

There have been no material changes to the risk factors included in our Annual Report on Form 10-K for the year ended September 30, 2020. Please carefully consider the information set forth in this Quarterly Report on Form 10-Q and the risk factors discussed in Part I, “Item 1A. Risk Factors” in our Annual Report on Form 10-K for the year ended September 30, 2020, which could materially affect our business, financial condition or future results. The risks described in our Annual Report on Form 10-K, as well as other risks and uncertainties, could materially and adversely affect our business, results of operations and financial condition, which in turn could materially and adversely affect the trading price of shares of our Common Stock. Additional risks not currently known or currently material to us may also harm our business.

### ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

### ITEM 3. DEFAULTS UPON SENIOR SECURITIES

None.

### ITEM 4. MINE SAFETY DISCLOSURES

Not Applicable.

### ITEM 5. OTHER INFORMATION

None.

**ITEM 6. EXHIBITS**

<b>Exhibit Number</b>	<b>Document Description</b>
10.1	<a href="#"><u>Exclusive License and Co-Funding Agreement by and between Arrowhead Pharmaceuticals, Inc. and Takeda Pharmaceuticals U.S.A., Inc., dated October 7, 2020*</u></a> <sup>†</sup>
10.2	<a href="#"><u>Amendment No. 1 to Lease Agreement by and between Arrowhead Pharmaceuticals, Inc. and 177 Colorado Owner LLC., dated October 23, 2020*</u></a>
10.3	<a href="#"><u>Amendment No. 6 to Lease Agreement by and between Arrowhead Pharmaceuticals, Inc. and University Research Park, dated November 23, 2020*</u></a>
10.4	<a href="#"><u>Amendment No. 7 to Lease Agreement by and between Arrowhead Pharmaceuticals, Inc. and University Research Park, dated December 9, 2020*</u></a>
31.1	<a href="#"><u>Certification of Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*</u></a>
31.2	<a href="#"><u>Certification of Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002*</u></a>
32.1	<a href="#"><u>Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**</u></a>
32.2	<a href="#"><u>Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002**</u></a>
101.SCH	Inline XBRL Taxonomy Extension Schema Document*
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document*
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document*
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document*
104	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended December 31, 2020, formatted in Inline XBRL (included as Exhibit 101)*

\* Filed herewith

\*\* Furnished herewith

† Certain confidential portions of this exhibit were omitted by means of marking such portions with asterisks because the identified confidential portions (i) are not material and (ii) would be competitively harmful if publicly disclosed.

**SIGNATURE**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this Quarterly Report on Form 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

Dated: February 4, 2021

ARROWHEAD PHARMACEUTICALS, INC.

By: /s/ Kenneth A. Myszkowski  
Kenneth A. Myszkowski  
Chief Financial Officer  
(Principal Financial Officer and Duly Authorized Officer)

\*\*\*] = CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY BRACKETS, HAS BEEN OMITTED BECAUSE THE INFORMATION (I) IS NOT MATERIAL AND (II) WOULD BE COMPETITIVELY HARMFUL IF PUBLICLY DISCLOSED.

***EXECUTION VERSION***

**EXCLUSIVE LICENSE AND CO-FUNDING AGREEMENT**

**BY AND BETWEEN**

**ARROWHEAD PHARMACEUTICALS INC.**

**AND**

**TAKEDA PHARMACEUTICALS U.S.A., INC.**

**OCTOBER 7, 2020**

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## EXCLUSIVE LICENSE AND CO-FUNDING AGREEMENT

THIS EXCLUSIVE LICENSE AND CO-FUNDING AGREEMENT (this “**Agreement**”), entered into as of October 7, 2020 (the “**Execution Date**”), is entered into by and between Takeda Pharmaceuticals U.S.A., Inc., a company incorporated under the laws of the State of Delaware (“**Takeda**”), and Arrowhead Pharmaceuticals Inc., a company organized and existing under the Laws of the State of Delaware (“**Arrowhead**”). Arrowhead and Takeda are referred to in this Agreement individually as a “**Party**” and collectively as the “**Parties**.”

### RECITALS

**WHEREAS**, Takeda is a global pharmaceutical company engaged in the research, development, and commercialization of products useful in the amelioration, treatment, or prevention of human diseases and conditions;

**WHEREAS**, Arrowhead is a biopharmaceutical company focused on developing medicines that treat intractable diseases by silencing the genes that cause them, including advancing treatments for protein-based genetic disorders;

**WHEREAS**, Arrowhead Controls certain Patent Rights, Know-How, and other intellectual property rights related to the Compounds and Products; and

**WHEREAS**, Takeda wishes to obtain, and Arrowhead desires to grant, a license under certain Patent Rights, Know-How, and other intellectual property rights Controlled by Arrowhead to Exploit the Compounds and Products on the terms and conditions set forth herein.

**NOW, THEREFORE**, the Parties hereby agree as follows:

### 1. DEFINITIONS

Unless specifically set forth to the contrary herein, the following terms, whether used in the singular or plural, will have the respective meanings set forth below:

- 1.1. “**AAT Gene**” means an AAT gene transcript (*SERPINA1*) that encodes AAT Protein, including [\*\*\*].
  - 1.2. “**AAT Protein**” means alpha-1 antitrypsin protein, including [\*\*\*].
  - 1.3. “**AATD**” means alpha-1 antitrypsin deficiency.
  - 1.4. “**AATD Field**” means all [\*\*\*] for the treatment of AATD.
  - 1.5. “**Accounting Standards**” means International Financial Reporting Standards (IFRS) or U.S. Generally Accepted Accounting Principles (GAAP), as generally and consistently applied in compliance with applicable Laws throughout a Party’s organization at the relevant time.
  - 1.6. “**Acquired Party**” and “**Acquiring Party**” have the meanings set forth in Section 2.8.2(c) (Permitted Competitive Products).
  - 1.7. “**Actual Additional Study Credit**” has the meaning set forth in Section 3.2.3(d) (Reimbursement for Additional Studies).
-

- 1.8.** “**Additional Studies**” means, collectively, (a) a Phase III Clinical Trial for a Product that is focused on the treatment of cirrhotic patients (adult F4cc) and (b) any Phase III Clinical Trials for a Product that are focused on the treatment of pediatric patients.
- 1.9.** “**Adverse Event**” or “**AE**” has the meaning set forth in 21 C.F.R. § 312.32 and generally means any untoward medical occurrence associated with the use of a product in human subjects, whether or not considered related to such product. An AE does not necessarily have a causal relationship with a product, that is, an AE can be any unfavorable and unintended sign (including an abnormal laboratory finding), symptom, or disease temporally associated with the use of such product.
- 1.10.** “**Affiliate**” means, with respect to a Person, any other Person that controls, is controlled by, or is under common control with such Person. For purposes of this Agreement, a Person will be deemed to control another Person if it owns or controls, directly or indirectly, more than 50% of the equity securities of such other Person entitled to vote in the election of directors (or, in the case that such other Person is not a corporation, for the election of the corresponding managing authority), or otherwise has the power to direct the management and policies of such other Person. The Parties acknowledge that in the case of certain entities organized under the laws of certain countries outside the United States, the maximum percentage ownership permitted by law for a foreign investor may be less than 50%, and that in such case such lower percentage will be substituted in the preceding sentence, *provided* that such foreign investor has the power to direct the management and policies of such entity. Neither of the Parties will be deemed to be an “Affiliate” of the other solely as a result of their entering into this Agreement.
- 1.11.** “**Agreement**” has the meaning set forth in the preamble.
- 1.12.** “**Alliance Manager**” has the meaning set forth in Section 9.1 (Alliance Manager).
- 1.13.** “**Allowable Overruns**” means any amount that is [\*\*\*] above the total budgeted or approved amounts for a [\*\*\*] on a [\*\*\*] basis set forth in the Co-Funded Development Budget, Co-Funded Commercialization Budget, or Co-Funded Medical Affairs Budget, or Other Operating Expenses Budget for such [\*\*\*].
- 1.14.** “**Annual Takeda Territory Net Sales**” has the meaning set forth in Section 10.2.4 (Takeda Territory Royalties).
- 1.15.** “**Antitrust Clearance Date**” means the earliest date on which all applicable waiting periods and approvals required under Antitrust Laws with respect to the transactions contemplated under this Agreement have expired or have been terminated (in the case of waiting periods) or been received (in the case of approvals), in each case, without the imposition of any conditions.
- 1.16.** “**Antitrust Filing**” means any filing with the United States Federal Trade Commission and the Antitrust Division of the United States Department of Justice and any other applicable Governmental Authority in the Territory, as required under any Antitrust Laws with respect to the transactions contemplated under this Agreement, together with all required documentary attachments thereto.

- 1.17. **“Antitrust Laws”** means any federal, state or foreign law, regulation, or decree, including the HSR Act, designed to prohibit, restrict, or regulate actions for the purpose or effect of monopolization or restraint of trade.
- 1.18. **“ARO-AAT”** has the meaning set forth in Section 1.64 (Compound).
- 1.19. **“Arrowhead”** has the meaning set forth in the preamble.
- 1.20. **“Arrowhead AAT-Specific Know-How”** means all Arrowhead Know-How relating to (a) [\*\*\*] Compounds or Products; (b) [\*\*\*] Compounds or Products; (c) [\*\*\*] relating to, Compounds; (d) the treatment of AATD [\*\*\*]; or (e) [\*\*\*] Compounds or Products.
- 1.21. **“Arrowhead AAT-Specific Patent Rights”** means all Arrowhead Patent Rights having claims Covering (a) [\*\*\*] of Compounds or Products; (b) [\*\*\*] of Compounds or Products; (c) [\*\*\*] relating to, Compounds; (d) the treatment of AATD [\*\*\*]; (e) [\*\*\*]; or (f) [\*\*\*] Compounds or Products. The Arrowhead AAT-Specific Patent Rights as of the Execution Date are set forth on Schedule 12.2.1(a).
- 1.22. **“Arrowhead AAT-Specific Technology”** means, collectively, the Arrowhead AAT-Specific Patent Rights and the Arrowhead AAT-Specific Know-How.
- 1.23. **“Arrowhead Competitive Product”** means any compound or product [\*\*\*].
- 1.24. **“Arrowhead Competitor”** means [\*\*\*].
- 1.25. **“Arrowhead Development Plan”** has the meaning set forth in Section 3.1.3 (Arrowhead Development Plan).
- 1.26. **“Arrowhead Indemnitees”** has the meaning set forth in Section 13.2 (Indemnification by Takeda).
- 1.27. **“Arrowhead Know-How”** means Know-How, other than Joint Program Know-How, owned or Controlled by Arrowhead or its Affiliates as of the Effective Date or during the Term that is necessary or reasonably useful to Exploit a Compound or a Product in the Field in the Territory, including any Program Know-How owned solely by Arrowhead. The Arrowhead Know-How as of the Execution Date includes the Arrowhead AAT-Specific Know-How and the Arrowhead Platform Know-How.
- 1.28. **“Arrowhead Manufacturing Activities”** has the meaning set forth in Section 6.1.1 (Arrowhead Manufacturing Activities).
- 1.29. **“Arrowhead Patent Rights”** means any Patent Rights owned or Controlled by Arrowhead as of the Effective Date or during the Term that are necessary or reasonably useful to exploit a Compound or a Product in the Field in the Territory, including any Program Patent Rights owned solely by Arrowhead. The Arrowhead Patent Rights as of the Execution Date include the Arrowhead AAT-Specific Patent Rights and the Arrowhead Platform Patent Rights.
- 1.30. **“Arrowhead Platform Know-How”** means all Arrowhead Know-How that is not Arrowhead AAT-Specific Know-How.

- 1.31. **“Arrowhead Platform Patent Right”** means all Arrowhead Patent Rights that are not Arrowhead AAT-Specific Patent Rights. The Arrowhead Platform Patent Rights as of the Execution Date are set forth on Schedule 12.2.1(b).
- 1.32. **“Arrowhead Platform Technology”** means, collectively, the Arrowhead Platform Patent Rights and the Arrowhead Platform Know-How.
- 1.33. **“Arrowhead Technology”** means, collectively, (a) the Arrowhead Patent Rights, (b) the Arrowhead Know-How, and (c) Arrowhead’s interest in the Joint Program Technology.
- 1.34. **“Assigned Regulatory Submissions”** means all INDs, MAAs, and other Regulatory Approvals or Regulatory Submissions assigned by Arrowhead to Takeda pursuant to Section 4.2 (Assignment of Regulatory Submissions).
- 1.35. **“Auditor”** has the meaning set forth in Section 10.4.3 (Records and Audits).
- 1.36. **“Bankruptcy Laws”** has the meaning set forth in Section 15.3.1 (Section 365(N)).
- 1.37. **“Breaching Party”** has the meaning set forth in Section 15.4.1 (Material Breach).
- 1.38. **“Business Day”** means a calendar day other than a Saturday, Sunday, or a bank or other public holiday in Boston, Massachusetts or Pasadena, California in the United States, or Tokyo in Japan.
- 1.39. **“Calendar Quarter”** means the respective periods of three consecutive calendar months ending on March 31, June 30, September 30, and December 31 of each Calendar Year.
- 1.40. **“Calendar Year”** means each successive period of twelve months commencing on January 1 and ending on December 31.
- 1.41. **“cGMP”** means the then-current good manufacturing practice standards, practices, and procedures promulgated or endorsed by the applicable Regulatory Authority as set forth in the guidelines imposed by such Regulatory Authority, as may be updated from time-to-time, including those as set forth in FDA regulations in 21 C.F.R. Parts 210 and 211 and all applicable FDA rules, regulations, orders, and guidances, and the requirements with respect to current good manufacturing practices prescribed by the European Community under provisions of “The Rules Governing Medicinal Products in the European Community, Volume 4, Good Manufacturing Practices, Annex 13, Manufacture of Investigational Medicinal Products, December 2010,” or as otherwise required by applicable Laws.
- 1.42. **“Change of Control”** means, with respect to a Party, (a) a merger, consolidation, recapitalization, or reorganization of such Party with a Third Party that results in the holders of beneficial ownership (other than by virtue of obtaining irrevocable proxies for purposes of management voting on matters as directed by beneficial owners) of the voting securities of such Party outstanding immediately prior thereto, or any securities into which such voting securities have been converted or exchanged, ceasing to hold beneficial ownership of more than 50% of the combined voting power of the surviving entity or the parent of the surviving entity immediately after such merger, consolidation, recapitalization, or reorganization, (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the direct or indirect beneficial owner

of more than 50% of the combined voting power of the outstanding securities of such Party, or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's and its controlled Affiliates' assets. Notwithstanding the foregoing, any transaction or series of transactions effected for the purpose of financing the operations of the applicable Party or changing the form or jurisdiction of organization of such Party (such as an initial public offering or other offering of equity securities to non-strategic investors or corporate reorganization) will not be deemed a "Change of Control" for purposes of this Agreement.

- 1.43. **"Clinical Trial"** means any study in humans (including a non-interventional study) conducted to obtain information regarding a pharmaceutical or biologic product, including information relating to the safety, tolerability, pharmacological activity, pharmacokinetics, dose ranging, or efficacy of such pharmaceutical or biologic product.
- 1.44. **"Clinical Trial Material"** or **"CTM"** means a Product that is in a finished pharmaceutical dosage form that is intended and suitable for administration and dosing to humans in Clinical Trials, but not intended for commercial sale (for example, in a form that does not include external packaging).
- 1.45. **"Clinical Trial Regulatory Submissions"** means all INDs, MAAs, and other Regulatory Submissions in the Territory related to the Current Phase II/III Clinical Trial or the New Clinical Trial, as applicable.
- 1.46. **"CMO"** means a contract manufacturing organization or a contract testing organization.
- 1.47. **"Co-Funded Commercialization Activities"** has the meaning set forth in Section 7.1.1 (Co-Funded Commercialization Plan).
- 1.48. **"Co-Funded Commercialization Budget"** has the meaning set forth in Section 7.1.1 (Co-Funded Commercialization Plan).
- 1.49. **"Co-Funded Commercialization Plan"** has the meaning set forth in Section 7.1.1 (Co-Funded Commercialization Plan).
- 1.50. **"Co-Funded Development Activities"** means (a) the Additional Studies conducted in or for the Profit-Share Territory and (b) and any PMR/PMC Activities.
- 1.51. **"Co-Funded Development Budget"** has the meaning set forth in Section 3.1.5 (Co-Funded Development Plan).
- 1.52. **"Co-Funded Development Plan"** has the meaning set forth in Section 3.1.5 (Co-Funded Development Plan).
- 1.53. **"Co-Funded Medical Affairs Activities"** has the meaning set forth in Section 8.1 (Co-Funded Medical Affairs Plan).
- 1.54. **"Co-Funded Medical Affairs Budget"** has the meaning set forth in Section 8.1 (Co-Funded Medical Affairs Plan).

- 1.55. **“Co-Funded Medical Affairs Plan”** has the meaning set forth in Section 8.1 (Co-Funded Medical Affairs Plan).
- 1.56. **“Code”** means the Internal Revenue Code of 1986, as amended.
- 1.57. **“Combination Product”** means a Product that is (a) sold in the form of a combination that contains or comprises one or more additional therapeutically active pharmaceutical agents (whether coformulated or copackaged or otherwise sold for a single price) other than the Compound; (b) sold for a single price together with any delivery device (but excluding any delivery devices, such as pre-filled syringes, autoinjector devices, or other similar delivery devices, in each case, the selling price of which in combination with a Product is not material relative to the selling price of an independent Product) (each of the therapeutically active pharmaceutical agents in clause (a) and the delivery device in clause (b), an **“Other Component”**); or (c) defined as a “combination product” by the FDA pursuant to 21 C.F.R. §3.2(e) or its foreign equivalent, where such “combination product” is sold for a single price.
- 1.58. **“Commercial Milestone Event”** has the meaning set forth in Section 10.2.2(b) (Commercial Milestones).
- 1.59. **“Commercial Milestone Payment”** has the meaning set forth in Section 10.2.2(b) (Commercial Milestones).
- 1.60. **“Commercialization” or “Commercialize”** means any and all activities directed to the marketing, promotion, distribution matters, offering for sale, sale, having sold, importing, having imported, exporting, having exported, or other commercialization of a pharmaceutical or biologic product (including pricing matters), but expressly excluding activities directed to Manufacturing, Development, or performance of Medical Affairs. **“Commercialize,” “Commercializing,” and “Commercialized”** will be construed accordingly.
- 1.61. **“Commercially Reasonable Efforts”** means, (a) with respect to Arrowhead, [\*\*\*] and (b) with respect to Takeda, [\*\*\*] taking into account [\*\*\*]. Notwithstanding the foregoing, neither Party will be obligated to [\*\*\*]. With respect to Takeda, [\*\*\*].
- 1.62. **“Competitive Product”** means, with respect to Arrowhead, an Arrowhead Competitive Product and, with respect to Takeda, a Takeda Competitive Product.
- 1.63. **“Competitive Infringement”** means (a) the making, using, selling, offering for sale, importing, or exporting by a Third Party of a pharmaceutical or biologic product in a country that actually or potentially infringes a Valid Claim of an Arrowhead Patent Right or Joint Program Patent Right in such country or (b) the filing of an ANDA under Section 505(j) of the FD&C Act or an application under Section 505(b)(2) of the FD&C Act naming a Product as a reference listed drug and including a certification under Section 505(j)(2)(A)(vii)(IV) or 505(b)(2)(A)(IV), respectively.
- 1.64. **“Compound”** means (a) the chemical composition internally coded by Arrowhead as ARO-AAT, the chemical structure of which is set forth on Schedule 1.64 (ARO-AAT Structure) (**“ARO-AAT”**), (b) [\*\*\*], and (c) [\*\*\*].

- 1.65.** “**Confidential Information**” means (a) any and all confidential or proprietary information and data, including scientific, pre-clinical, clinical, regulatory, manufacturing, marketing, financial and commercial information or data, unpublished patent applications and information related thereto and set forth therein, in each case, that is or has been provided or made available by or on behalf of one Party (the “**Disclosing Party**” with respect to such information) to the other Party (the “**Receiving Party**” with respect to such information) in connection with this Agreement or any related negotiations, discussions, or diligence, whether communicated in writing or orally or by any other method, and (b) the terms of this Agreement. Notwithstanding the foregoing, “Confidential Information” excludes any information that the receiving Party can show by competent evidence (i) is known by the receiving Party at the time of its receipt, and not through a prior disclosure by the disclosing Party, as documented by the receiving Party’s business records; (ii) is known to the public before its receipt from the disclosing Party, or thereafter becomes generally known to the public through no breach of this Agreement by the receiving Party; (iii) is subsequently disclosed to the receiving Party without obligation of confidentiality by a Third Party who has rightfully obtained such information and who is not under an obligation of confidentiality or other contractual obligation with respect to such information; or (iv) is developed by the receiving Party independently of Confidential Information received from the disclosing Party, as documented by the receiving Party’s business records.
- 1.66.** “**Control**” means the possession by a Party (whether by ownership, license, or otherwise), other than pursuant to this Agreement, of, (a) with respect to any tangible Know-How, the legal authority or right to physical possession of such tangible Know-How, with the right to provide such tangible Know-How to the other Party on the terms set forth herein, (b) with respect to Patent Rights, Regulatory Approvals, Regulatory Submissions, intangible Know-How, or other intellectual property, the legal authority or right to grant a license, sublicense, access, or right to use (as applicable) to the other Party under such Patent Rights, Regulatory Approvals, Regulatory Submissions, intangible Know-How, or other intellectual property on the terms set forth herein, or (c) with respect to a product or component thereof, the legal authority or right to grant a license, sublicense, access, or right to use (as applicable) to the other Party under Patent Rights that Cover or proprietary Know-How that is incorporated in or embodies, such product or component on the terms set forth herein, in each case ((a), (b), and (c)), (i) without breaching or otherwise violating the terms of any arrangement or agreement with a Third Party in existence as of the time such Party or its Affiliates would first be required hereunder to grant the other Party such access, right to use, licenses, or sublicense or (ii) with respect to Know-How or Patent Rights developed, acquired, or licensed by a Party after the Effective Date, without incurring any additional payment obligations to a Third Party that are not subject to an agreed allocation between the Parties.
- 1.67.** “**Cover**,” “**Covering**” or “**Covered**” means, with respect to a particular subject matter at issue and a relevant Patent Right or individual claim in such Patent Right, as applicable, that the manufacture, use, sale, offer for sale, or importation of such subject matter would fall within the scope of one or more claims in such Patent Right.
- 1.68.** “**CRO**” means a contract research organization.
- 1.69.** “**Current Phase II/III Clinical Trial**” means the clinical study entitled “Placebo-Controlled, Multi-dose, Phase 2/ 3 Study to Determine the Safety, Tolerability and Effect on Liver Histologic Parameters in Response to ARO-AAT in Patients With Alpha-1 Antitrypsin Deficiency (AATD),” and as identified by the ClinicalTrials.gov Identifier: NCT03945292.



- 1.70. **“Current Product”** means the Product containing ARO-AAT that is the subject of the New Clinical Trial.
- 1.71. **“Data Read-Out”** means, with respect to a Clinical Trial, the date that the tables, figures, and listings for such Clinical Trial are provided to the Party that is the sponsor of such Clinical Trial.
- 1.72. **“Develop”** and **“Development”** means all internal and external research, discovery, development, and regulatory activities related to pharmaceutical or biologic products, including (a) research, non-clinical testing, toxicology, testing and studies, non-clinical and preclinical activities, and Clinical Trials, and (b) preparation, submission, review, and development of data or information for the purpose of submission to a Regulatory Authority to obtain authorization to conduct Clinical Trials and to obtain, support, or maintain Regulatory Approval of a pharmaceutical or biologic product and interacting with Regulatory Authorities following receipt of Regulatory Approval in the applicable country or region for such pharmaceutical or biologic product regarding the foregoing, but expressly excluding activities directed to Manufacturing, performance of Medical Affairs, or Commercialization. Development will include development and regulatory activities for additional forms or indications for a pharmaceutical or biologic product after receipt of Regulatory Approval of such product (including label expansion) and Clinical Trials initiated following receipt of Regulatory Approval or any Clinical Trial to be conducted after receipt of Regulatory Approval that are mandated or recommended by the applicable Regulatory Authority to support or maintain such Regulatory Approval (such as post-marketing requirements, post-marketing commitments, and other observational studies, implementation and management of registries and analysis thereof, in each case, if required by any Regulatory Authority in any region in the Territory to support or maintain Regulatory Approval for a pharmaceutical or biologic product in such region). **“Develop,” “Developing,”** and **“Developed”** will be construed accordingly.
- 1.73. **“Development Milestone Event”** has the meaning set forth in Section 10.2.2(a) (Development Milestones).
- 1.74. **“Development Milestone Payment”** has the meaning set forth in Section 10.2.2(a) (Development Milestones).
- 1.75. **“Development Report”** has the meaning set forth in Section 3.2.4 (Products Development Reports).
- 1.76. **“Directed To”** means, with respect to a compound contained in a product and its target(s), that the therapeutic mechanism of such compound is intended to activate, inhibit, agonize, antagonize, or otherwise modulate the expression or activity of such target(s).
- 1.77. **“Disclosing Party”** has the meaning set forth in Section 1.65 (Confidential Information).
- 1.78. **“Disputes”** has the meaning set forth in Section 17.3.1 (Exclusive Dispute Resolution Mechanism).
- 1.79. **“Dollars”** or **“\$”** means the legal tender of the United States of America.
- 1.80. **“Effective Date”** has the meaning set forth in Section 16.1 (Effective Date).

- 1.81.** “**Eligible Commercialization Expenses**” means all FTE Costs, Out-of-Pocket Costs, and other costs and expenses incurred by or on behalf of Takeda or its Affiliates that are attributable to Commercialization activities for the Products in the Profit-Share Territory in accordance with the applicable Co-Funded Commercialization Plan, including the following
- (a) [\*\*\*];
  - (b) [\*\*\*] that is specifically allocated to sales of such Product; and
  - (c) costs and expenses that are attributable to [\*\*\*];

in each case, to the extent such costs are consistent with the applicable Co-Funded Commercialization Budget, *plus* applicable Allowable Overruns [\*\*\*].

If any FTE Cost, Out-of-Pocket Cost, or other cost or expense is specifically identifiable or reasonably allocable to more than one Commercialization cost category set forth above, then such cost or expense will only be counted once (*i.e.*, as an Eligible Commercialization Expense with respect to only one such category). No FTE Cost, Out-of-Pocket Cost, or other cost or expense included as an Eligible Commercialization Expense will also be included as an Eligible Development Expense or an Eligible Medical Affairs Expense. Costs attributable to sales personnel will be calculated in accordance with Section 1.81(c) and not as FTE Costs. Eligible Commercialization Expenses will be recognized and calculated in accordance with the applicable Accounting Standards.

- 1.82.** “**Eligible Development Costs Share Ratio**” has the meaning set forth in Section 3.2.3(b) (PMR/PMC Activities).

- 1.83.** “**Eligible Development Expenses**” means all FTE Costs, Out-of-Pocket Costs, and other costs and expenses incurred by or on behalf of Takeda or its Affiliates that are attributable to PMR/PMC Activities in accordance with the applicable Co-Funded Development Plan, including the following:

- (a) [\*\*\*];
- (b) [\*\*\*]; and

in each case to the extent such costs are consistent with the applicable Co-Funded Development Budget, *plus* applicable Allowable Overruns [\*\*\*]. If any FTE Cost, Out-of-Pocket Cost, or other cost or expense is specifically identifiable or reasonably allocable to more than one Development cost category above, then such cost or expense will only be counted once. No expense included as an Eligible Development Expense will also be included as an Eligible Commercialization Expense or an Eligible Medical Affairs Expense. Eligible Development Expenses will be recognized and calculated in accordance with the applicable Accounting Standards.

- 1.84.** “**Eligible Development Expenses Report**” has the meaning set forth in Section 3.2.3(b) (PMR/PMC Activities).

- 1.85.** “**Eligible Medical Affairs Expenses**” means all FTE Costs, Out-of-Pocket Costs, and other costs and expenses incurred by or on behalf of Takeda or its Affiliates that are attributable to [\*\*\*], for the Products in the Profit-Share Territory in accordance with the Co-Funded Medical Affairs Plan and Co-Funded Medical Affairs Budget, *plus* applicable Allowable Overruns [\*\*\*]. No expense included as an Eligible Medical Affairs Expense will also be included as an Eligible Development Expense or Eligible Commercialization Expense. Eligible Medical Affairs Expenses will be recognized and calculated in accordance with the applicable Accounting Standards.
- 1.86.** “**Eligible Shared Expenses**” means the Eligible Commercialization Expenses, Eligible Medical Affairs Expenses, and Other Operating Expenses.
- 1.87.** “**EU**” means the European Union, as its membership may be constituted from time to time, and any successor thereto.
- 1.88.** “**Execution Date**” has the meaning set forth in the preamble.
- 1.89.** “**Executive Officer**” means, (a) the Chief Executive Officer of Arrowhead (or an executive officer of Arrowhead designated by the Chief Executive Officer of Arrowhead who has the power and authority to resolve such matter) and the President, Research & Development of Takeda (or an executive officer of Takeda designated by the President, Research & Development who has the power and authority to resolve such matter.) If the position of any of the Executive Officers identified in this Section 1.89 (Executive Officer) no longer exists due to a Change of Control, corporate reorganization, corporate restructuring, or the like of a Party that results in the elimination of the identified position, then the applicable Party will replace the applicable Executive Officer with another executive officer with responsibilities and seniority comparable to the eliminated Executive Officer.
- 1.90.** “**Exploit**” or “**Exploitation**” means to make, have made, import, have imported, export, have exported, distribute, have distributed, use, have used, sell, have sold, offer for sale, or have offered for sale, including to Develop, Manufacture, Commercialize, and perform Medical Affairs activities.
- 1.91.** “**FD&C Act**” means the United States Federal Food, Drug, and Cosmetic Act, as amended.
- 1.92.** “**FDA**” means the United States Food and Drug Administration or any successor Governmental Authority having substantially the same function.
- 1.93.** “**Field**” means all fields of use.
- 1.94.** “**First Commercial Sale**” means, [\*\*\*].
- 1.95.** “**Force Majeure**” has the meaning set forth in Section 17.12 (Force Majeure).
- 1.96.** “**FTE**” means the equivalent of a full-time person’s work time, carried out by an appropriately qualified employee of a Party or its Affiliates, on the performance of Development, Manufacturing, Commercialization, or Medical Affairs activities, based on [\*\*\*] person-hours per year, pro-rated as necessary. Overtime, and work on weekends, holidays, and the like [\*\*\*].

- 1.97.** “**FTE Costs**” means, for any period, the FTE Rate multiplied by the number of FTEs in such period.
- 1.98.** “**FTE Rate**” means [\*\*\*] per one full FTE per full 12-month Calendar Year, which rate includes all direct and indirect costs of the performing Party’s FTE, including personnel and travel expenses. Such rate, [\*\*\*].
- 1.99.** “**Forecasted Additional Study Credit**” has the meaning set forth in Section 3.2.3(d) (Reimbursement for Additional Studies).
- 1.100.** “**GCP**” means the then-current good clinical practice standards, practices, and procedures promulgated or endorsed by the applicable Regulatory Authority as set forth in the guidelines imposed by such Regulatory Authority, as may be updated from time-to-time, including those as set forth in FDA regulations in 21 C.F.R. Parts 11, 50, 54, 56, 312, 314, and 320 and all related FDA rules, regulations, orders, and guidances, and by the International Conference on Harmonization E6: Good Clinical Practices Consolidated Guideline (the “**ICH Guidelines**”).
- 1.101.** “**Generic Entry**” has the meaning set forth in Section 10.2.5(b) (Reduction for Generic Competition).
- 1.102.** “**Generic Product**” means any pharmaceutical product sold by a Third Party (excluding Products sold by Sublicensees on behalf of Takeda or its Affiliates in accordance with the terms of this Agreement or any settlement agreement pertaining to patent litigation arising in connection with this Agreement) that: (a) contains the same active ingredient as the applicable Product, [\*\*\*]; (b) is A/B Rated with respect to such Product or otherwise approved by the Regulatory Authority in such country as a substitutable generic for such Product; or (c) is approved in reliance, in whole or in part, on a prior Regulatory Approval of such Product.
- 1.103.** “**GLP**” means the then-current good laboratory practice standards, practices, and procedures promulgated or endorsed by the applicable Regulatory Authority as set forth in the guidelines imposed by such Regulatory Authority, as may be updated from time-to-time, including those as set forth in FDA regulations in 21 C.F.R. Part 58 and all applicable FDA rules, regulations, orders, and guidances, and the requirements with respect to good laboratory practices prescribed by the European Community, the OECD (Organization for Economic Cooperation and Development Council) and the ICH Guidelines.
- 1.104.** “**Governmental Authority**” means any applicable government authority, court, council, tribunal, arbitrator, agency, department, bureau, branch, office, legislative body, commission or other instrumentality of (a) any government of any country or territory, (b) any nation, state, province, county, city, or other political subdivision thereof, or (c) any supranational body.
- 1.105.** “**H-W Suit Notice**” has the meaning set forth in Section 14.3.2(c) (Hatch-Waxman).
- 1.106.** “**Hatch-Waxman Act**” means rights conferred in the U.S. under the Drug Price Competition and Patent Term Restoration Act, 21 U.S.C. §355, as amended (or any successor statute or regulation).
- 1.107.** “**HSR Act**” means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules promulgated thereunder.

- 1.108. “**ICH**” means International Conference on Harmonization.
- 1.109. “**ICH Guidelines**” has the meaning set forth in Section 1.100 (GCP).
- 1.110. “**IND**” means an Investigational New Drug Application (as defined in the FD&C Act), clinical trial application, or similar application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority anywhere in the world in conformance with the requirement of such Regulatory Authority, and any amendments thereto.
- 1.111. “**IND Transfer Date**” has the meaning set forth in Section 4.2.1(a) (Clinical Trial Regulatory Submissions).
- 1.112. “**Indemnified Party**” has the meaning set forth in Section 13.4.1 (Notice).
- 1.113. “**Indemnifying Party**” has the meaning set forth in Section 13.4.1 (Notice).
- 1.114. “**Initial Co-Funded Commercialization Budget**” has the meaning set forth in Section 7.1.1 (Co-Funded Commercialization Plan).
- 1.115. “**Initial Co-Funded Development Budget**” has the meaning set forth in Section 3.1.5 (Co-Funded Development Plan).
- 1.116. “**Initial Co-Funded Medical Affairs Budget**” has the meaning set forth in Section 8.1 (Co-Funded Medical Affairs Plan).
- 1.117. “**Initial Manufacturing Period**” has the meaning set forth in Section 6.1.1 (Arrowhead Manufacturing Activities).
- 1.118. “**Initiation**” means, with respect to a Clinical Trial of a pharmaceutical or biologic product, the first dosing of the first human subject in such Clinical Trial.
- 1.119. “**IP Counsel**” means the IP Head, Gastroenterology Therapeutic Area of Takeda the Vice President, IP and Associate General Counsel of Arrowhead or their designees.
- 1.120. “**Joint Program Know-How**” means any and all Program Know-How developed or invented jointly by or on behalf of the Parties or their respective Affiliates.
- 1.121. “**Joint Program Patent Rights**” means the Program Patent Rights Covering any Joint Program Know-How.
- 1.122. “**Joint Program Technology**” means the Joint Program Know-How and Joint Program Patent Rights.
- 1.123. “**JSC**” has the meaning set forth in Section 9.2.1 (Joint Steering Committee: Purpose; Formation).
- 1.124. “**Know-How**” means all commercial, technical, scientific, and other know-how and information, inventions, discoveries, trade secrets, knowledge, technology, methods, processes, practices, formulae, amino acid sequences, nucleotide sequences, instructions, skills, techniques, procedures,

experiences, ideas, technical assistance, designs, drawings, assembly procedures, computer programs, specifications, data and results (including biological, chemical, pharmacological, toxicological, pharmaceutical, physical and analytical, preclinical, clinical, safety, manufacturing and quality control data and know-how, including regulatory data, study designs and protocols), and materials, in all cases, whether or not confidential, proprietary, patentable, in written, electronic, or any other form now known or hereafter developed, but expressly excluding all Patent Rights.

- 1.125. “**Laws**” means all applicable laws, statutes, rules, regulations, orders, judgments, injunctions, ordinances, codes, principles of common law, or other pronouncements having the binding effect of law of any Governmental Authority, including if either Party is or becomes subject to a legal obligation to a Regulatory Authority or other Governmental Authority (such as a corporate integrity agreement or settlement agreement with a Governmental Authority).
- 1.126. “**Losses**” has the meaning set forth in Section 13.1 (Indemnification by Arrowhead).
- 1.127. “**MAA**” means any new drug application or other marketing authorization application, in each case, filed with the applicable Regulatory Authority in a country or other regulatory jurisdiction (and all supplements and amendments thereto), which application is required to commercially market or sell a pharmaceutical or biologic product in such country or jurisdiction, including all New Drug Applications submitted to the FDA in the United States in accordance with the FD&C Act with respect to a pharmaceutical product or any analogous application or submission with any Regulatory Authority in any other country or regulatory jurisdiction.
- 1.128. “**Major Market**” means each of the [\*\*\*], and the [\*\*\*].
- 1.129. “**Manufacturing**” or “**Manufacture**” means activities directed to process, analytical and formulation development, manufacturing, processing, packaging, labeling, filling, finishing, assembly, quality assurance, quality control, testing, and release, shipping, or storage of any pharmaceutical or biologic product (or any components or process steps involving any product or any companion diagnostics), placebo, or comparator agent, as the case may be, including process development, qualification, and validation, scale-up, pre-clinical, clinical, and commercial manufacture and analytic development, product characterization, and stability testing, but expressly excluding activities directed to Development, performance of Medical Affairs, or Commercialization. “**Manufacturing**” and “**Manufactured**” will be construed accordingly.
- 1.130. “**Manufacturing Costs**” means, with respect to the Products, the consolidated fully burdened Manufacturing costs in accordance with the applicable Accounting Standards, which will be the sum of:
- (a) [\*\*\*]; and
  - (b) [\*\*\*].
- 1.131. “**Manufacturing Technology Transfer**” has the meaning set forth in Section 6.4 (Manufacturing Technology Transfer).

- 1.132. “Marketing Approval”** means, with respect to a country or extra-national territory, any and all approvals (including Regulatory Approval), licenses, registrations, or authorizations of any Regulatory Authority that are required in order to Commercialize a Product in such country or some or all of such extra-national territory, including Pricing Approval.
- 1.133. “Material Shared In-License”** means any Shared In-License under which Takeda reasonably anticipates owing average annual payment obligations in excess of [\*\*\*].
- 1.134. “Medical Affairs”** means activities conducted by a Party’s medical affairs departments (or, if a Party does not have a medical affairs department, the equivalent function thereof), including medical science liaisons, medical directors, communications with key opinion leaders (including key opinion leader selection and management, health care professional and patient speakers programs), medical education and development of materials related thereto, congresses or symposia, advisory boards (to the extent related to medical affairs or clinical guidance), activities performed in connection with patient registries, real world evidence collection, and other medical programs and communications, including investigator sponsored studies, educational grants, research grants, and charitable donations to the extent related to medical affairs and not to other activities that are not conducted by a Party’s medical affairs (or equivalent) departments.
- 1.135. “MWG”** has the meaning set forth in Section 6.1.2 (Manufacturing Working Group).
- 1.136. “Milestone Events”** has the meaning set forth in Section 10.2.2(b) (Commercial Milestones).
- 1.137. “Milestone Payments”** has the meaning set forth in Section 10.2.2(b) (Commercial Milestones).
- 1.138. “NDA”** means a New Drug Application, as defined in the FD&C Act and applicable regulations promulgated thereunder by the FDA, or any analogous application or submission with any Regulatory Authority outside of the U.S.
- 1.139. “Net Sales”** means with respect to a Product, the gross amount invoiced in a country in the Territory by or on behalf of a [\*\*\*] (each of the foregoing Persons, a “**Selling Party**”) for the sale or other disposition of such Product in such country to Third Parties [\*\*\*], less the following deductions calculated in accordance with the applicable Accounting Standards, consistently applied throughout the Territory by the relevant Selling Party, [\*\*\*]:
- (a) [\*\*\*];
  - (b) [\*\*\*];
  - (c) [\*\*\*];
  - (d) [\*\*\*];
  - (e) [\*\*\*]; and
  - (f) [\*\*\*].

[\*\*\*]

Notwithstanding the foregoing, [\*\*\*].

In the case of any Combination Product sold in a given country in the Territory, Net Sales for the purpose of determining royalties and sales milestone events of the Combination Product in such country will be calculated by multiplying actual Net Sales of such Combination Product in such country by the fraction  $A/(A+B)$ , where A is the invoice price of the Product included in such Combination Product if sold separately as a stand-alone Product in such country, and B is the total invoice price of the Other Components in the Combination Product, if sold separately in such country.

If, on a country-by-country basis, the Product included in such Combination Product is sold separately as a stand-alone Product in a country, but the Other Components in the Combination Product are not sold separately in such country, then Net Sales for the purpose of determining royalties and sales milestone events of the Combination Product for such country will be calculated by multiplying actual Net Sales of the Combination Product in such country by the fraction  $A/C$ , where A is the invoice price of the Product if sold separately as a stand-alone Product in such country, and C is the invoice price of the Combination Product in such country.

If, on a country-by-country basis, the Product included in the Combination Product is not sold separately as a stand-alone Product in such country, but the Other Components included in the Combination Product are sold separately in such country, then Net Sales for the purpose of determining royalties and sales milestone events of the Combination Product for such country will be calculated by multiplying actual Net Sales of the Combination Product in such country by the fraction  $(C-B)/C$ , where B is the invoice price of the Other Components included in such Combination Product if sold separately in such country, and C is the invoice price of the Combination Product in such country.

If neither the Product nor the Other Components included in the Combination Product are sold separately in a given country, then Net Sales for the purpose of determining royalties and sales milestone events in such country will be determined [\*\*\*].

- 1.140. “**Neutral Expert**” has the meaning set forth in Section 6.1.5(a) (Arbitration for Failure to Agree).
- 1.141. “**New Clinical Trial**” means, collectively, the New Phase II Trial and the New Phase III Trial.
- 1.142. “**New Phase II Trial**” means the Current Phase II/III Clinical Trial as amended with endpoints acceptable to FDA and appropriate for a Phase II Clinical Trial.
- 1.143. “**New Phase III Trial**” means the clinical study to be designed and implemented with endpoints appropriate for a Phase III Clinical Trial.
- 1.144. “**Non-Breaching Party**” has the meaning set forth in Section 15.4.1 (Material Breach).
- 1.145. “**Ongoing Development Activities**” means all Development activities in support of the Ongoing Development Trials, including the activities set forth on Schedule 1.145 (Ongoing Development Activities).
- 1.146. “**Ongoing Development Trials**” means (a) the New Phase II Trial and (b) those other non-clinical or clinical studies that are ongoing as of the Effective Date, as set forth on Schedule 1.146 (Ongoing Development Trials).



- 1.147. **“Operating Profits or Losses”** means, for all Products in the Profit-Share Territory, the profits or losses calculated in accordance with Schedule 10.2.1 (Profit and Loss Share).
- 1.148. **“Other Component”** has the meaning set forth in Section 1.57 (Combination Product).
- 1.149. **“Other Operating Expenses”** means [\*\*\*]:
- (a) [\*\*\*];
  - (b) [\*\*\*];
  - (c) [\*\*\*];
  - (d) [\*\*\*];
  - (e) [\*\*\*];
  - (f) [\*\*\*]; and
  - (g) [\*\*\*];
- No expense included as an Eligible Development Expense, an Eligible Commercialization Expense, or an Eligible Medical Affairs Expense will also be included as an Other Operating Expense. Other Operating Expenses will be recognized and calculated in accordance with the applicable Accounting Standards.
- 1.150. **“Other Operating Expenses Budget”** has the meaning set forth in Section 5.1 (Other Operating Expenses).
- 1.151. **“Out-of-Pocket Costs”** means, with respect to certain activities for a Product hereunder, specifically identifiable expenses paid or payable by a Party or its Affiliates to Third Parties to conduct such activities, including payments to contract personnel (including contractors, consultants and Subcontractors).
- 1.152. **“Overhead Costs”** means costs incurred by a Party or for its account that are attributable to the performing Party’s supervisory or support services and functions, occupancy costs, corporate bonus (to the extent not charged directly to department), and its payroll, information systems, human relations or purchasing functions, and, in each case, that are allocated to company departments based on space occupied or headcount or other activity-based method, including any costs attributed to general corporate activities including, by way of example, executive management, investor relations, business development, legal affairs, and finance.
- 1.153. **“Party”** or **“Parties”** has the meaning set forth in the preamble.
- 1.154. **“Patent Costs”** means [\*\*\*].
- 1.155. **“Patent Offices”** has the meaning set forth in Section 12.2.5 (Validity and Enforceability).

- 1.156.** “**Patent Right**” means any patent (including any utility or design patent) or patent application (including any provisional, utility, continued prosecution, continuation, continuations-in-part, divisional, or substitution application), or other filing claiming priority thereto or sharing any common priority therewith, whether directly or indirectly, as well as any patent that issues or has issued with respect to any such patent application, reissue, re-examination, renewal, or extension (including any patent term adjustment, patent term extension, or supplemental protection certificate, or the equivalent thereof), registration or confirmation patent, patent resulting from a post-grant proceeding, patent of addition, revalidation, restoration or extension thereof, or any inventor’s certificate, utility model (including any petty patent, innovation patent, utility certificate, functional design, short-term patent, minor patent, or small patent), or any equivalent or counterpart thereof in any country or jurisdiction. For clarity, a patent filing (a patent or a patent application) is considered to have been made (or to be pending or in force) within a selected time period if the filing itself, or any other filing to which it claims priority or with which it shares any common priority, was made, within (or was pending, or in force within) the time period.
- 1.157.** “**Payments**” has the meaning set forth in Section 10.4.5(b) (Withholding Taxes).
- 1.158.** “**Permitted Competitive Products**” has the meaning set forth in Section 2.8.2(c) (Permitted Competitive Products).
- 1.159.** “**Person**” means any natural person, corporation, unincorporated organization, partnership, association, sole proprietorship, joint stock company, joint venture, limited liability company, trust or government, Governmental Authority, or any other similar entity.
- 1.160.** “**Pharmacovigilance Agreement**” has the meaning set forth in Section 4.5 (Pharmacovigilance Agreement).
- 1.161.** “**Phase II Clinical Trial**” means a Clinical Trial (or any arm thereof) of an investigational product that satisfies the requirements of U.S. federal regulation 21 C.F.R. § 312.21(b) and its successor regulation, or an equivalent Clinical Trial prescribed by the relevant Regulatory Authority in a country other than the United States.
- 1.162.** “**Phase III Clinical Trial**” means a Clinical Trial (or any arm thereof) of an investigational product on a sufficient number of patients that satisfies the requirements of U.S. federal regulation 21 C.F.R. § 312.21(c) and its successor regulation or an equivalent Clinical Trial prescribed by the relevant Regulatory Authority in a country other than the United States.
- 1.163.** “**PMR/PMC Activities**” means any post-marketing requirements, post-marketing commitments, or other Clinical Trials undertaken as a condition to obtain or maintain Regulatory Approval for a Product in the Profit-Share Territory.
- 1.164.** “**Pre-Existing Third Party Agreements**” means those certain agreements between Arrowhead and a Third Party, the applicable sections of which are set forth on Schedule 1.164 (Pre-Existing Third Party Agreements).
- 1.165.** “**Pricing Approval**” means, with respect to any country where a Governmental Authority authorizes reimbursement for, or approves or determines pricing for, pharmaceutical or biologic products, receipt (or, if required to make such authorization, approval, or determination effective,

publication) of such reimbursement authorization, pricing approval, or determination (as the case may be).

- 1.166. **“Product”** means any pharmaceutical product comprised, in whole or in part, of the Compound, including all forms, presentations, strengths, doses, and formulations (including any method of delivery), either alone or as a Combination Product.
- 1.167. **“Profit-Share Territory”** means the United States.
- 1.168. **“Program Know-How”** means any Know-How developed or invented during the Term by or on behalf of a Party, any of its Affiliates or Sublicensees, either alone or jointly, in the performance of activities relating to the Exploitation of Products under this Agreement.
- 1.169. **“Program Patent Rights”** means any Patent Right that (a) has a priority date after the Effective Date, and (b) Covers any Program Know-How.
- 1.170. **“Prosecution and Maintenance”** or **“Prosecute and Maintain”** means, with regard to a particular Patent Right, the preparation, filing, and prosecution (including any interferences, reissue proceedings, reexaminations, supplemental examinations, derivation proceedings, or any other similar proceeding before a patent authority of competent jurisdiction), and maintenance (including paying maintenance fees and annuities) of such Patent Right.
- 1.171. **“Potential Material Shared In-License Term Sheet”** has the meaning set forth in Section 2.4.2 (Shared In-License Process).
- 1.172. **“P&L Share”** means the Parties’ equal sharing of the Operating Profits or Losses for Products pursuant to Section 10.2.1 (Profit and Loss Share).
- 1.173. **“Receiving Party”** has the meaning set forth in Section 1.65 (Confidential Information).
- 1.174. **“Redacted Agreement”** has the meaning set forth in Section 11.1.4(b) (Confidential Treatment).
- 1.175. **“Regulatory Approval”** means, with respect to a particular country or other regulatory jurisdiction, any approval of a MAA or other approval, product, or establishment license, registration, or authorization of any Regulatory Authority necessary for the commercial marketing or sale of a pharmaceutical or biologic product in such country or other regulatory jurisdiction, excluding, in each case, Pricing Approval.
- 1.176. **“Regulatory Authority”** means any Governmental Authority responsible for granting Regulatory Approvals of pharmaceutical or biologic products.
- 1.177. **“Regulatory Exclusivity”** means any exclusive marketing rights or data exclusivity rights conferred by any Regulatory Authority with respect to a Product in a country or jurisdiction in the Territory, other than a Patent Right, that prohibits a Person from (a) relying on safety or efficacy data generated by or on behalf of a Party with respect to such Product in an application for Regulatory Approval of a biosimilar product, or (b) Commercializing a Product and a Generic Product thereof, including orphan drug exclusivity or rights similar thereto in other countries or regulatory jurisdictions.

- 1.178. **“Regulatory Lead”** means Takeda; except with respect to any Regulatory Submissions for the Ongoing Development Trials prior to the IND Transfer Date, for which Arrowhead will be the Regulatory Lead.
- 1.179. **“Regulatory Submissions”** means any regulatory application, submission, notification, communication, correspondence, registration, Regulatory Approval, or other filing made to, received from or otherwise conducted with a Regulatory Authority related to Developing, Manufacturing, or obtaining marketing authorization for a pharmaceutical or biologic product in a particular country or jurisdiction.
- 1.180. **“Roche Agreement”** means the Stock and Asset Purchase Agreement between Arrowhead (at the time known as Arrowhead Research Corporation), and Hoffmann-La Roche Inc. and F. Hoffmann-La Roche Ltd., dated October 21, 2011.
- 1.181. **“Royalties”** has the meaning set forth in Section 10.2.4 (Takeda Territory Royalties).
- 1.182. **“Royalty Rates”** means the applicable royalty rate set forth in Table 10.2.4 (Royalty Payments (Takeda Territory)).
- 1.183. **“Royalty Report”** has the meaning set forth in Section 10.4.2 (Reports and Royalty Payments).
- 1.184. **“Royalty Term”** means, with respect to a Product and a country, the period commencing on the First Commercial Sale of such Product in such country and expiring on the latest of (a) [\*\*\*], (b) [\*\*\*], or (c) [\*\*\*].
- 1.185. **“Shared In-License”** has the meaning set forth in Section 2.4.1 (Shared In-Licenses).
- 1.186. **“SEC”** means the United States Securities and Exchange Commission or any successor Governmental Authority having substantially the same function.
- 1.187. **“Selling Party”** has the meaning set forth in Section 1.139 (Net Sales).
- 1.188. **“Subcontractor”** means a Third Party contractor engaged by a Party or its Affiliate to perform certain obligations or exercise certain rights of such Party under this Agreement (including all Third Party Distributors, contract research organizations, clinical research organizations or CMOs), but excluding all Sublicensees.
- 1.189. **“Sublicense Revenue”** means [\*\*\*].
- 1.190. **“Sublicensee”** means a Third Party to which Takeda or its Affiliate has granted or grants a sublicense, option to sublicense or similar right under the Arrowhead Technology to Exploit any Product, or any further sublicensee of such rights (regardless of the number of tiers, layers or levels of sublicenses of such rights), beyond the mere right to purchase any Product from or to provide services on behalf of Takeda or its Affiliates.
- 1.191. **“Supply Arbitration Draft”** has the meaning set forth in Section 6.1.5(b) (Arbitration for Failure to Agree).

- 1.192.** “**Takeda Competitive Product**” means [\*\*\*].
- 1.193.** “**Takeda Prosecuted Patent Rights**” has the meaning set forth in Section 14.2.1(a) (Takeda’s Right).
- 1.194.** “**Takeda Program Patent Rights**” means Program Patent Rights Covering inventions within the Program Know-How developed or invented solely by or on behalf of Takeda or its Affiliates.
- 1.195.** “**Takeda Technology**” means, to the extent that Takeda determines, in its sole discretion, to contribute (and provides notice thereof in writing) to any of the following for use by Arrowhead in the performance of Development or Manufacturing activities for the Product in the Territory in accordance with this Agreement, (a) Know-How Controlled by Takeda as of the Effective Date or during the Term that is necessary to Exploit a Compound or a Product in the Territory and (b) Patent Rights Controlled by Takeda as of the Effective Date or during the Term that are necessary to Develop or Manufacture a Compound or a Product under this Agreement in the Territory.
- 1.196.** “**Takeda Territory**” means worldwide, excluding the Profit-Share Territory.
- 1.197.** “**Tax**” and “**Taxation**” means any U.S. and non-U.S. federal, state, local, regional, municipal, or other tax or taxation, levy, duty, charge, withholding, or other assessment of any kind (including any related fine, penalty, addition to tax, surcharge, or interest) imposed by, or payable to, a Governmental Authority, including sales, use, excise, stamp, transfer, property, value added, goods and services, withholding, and franchise taxes.
- 1.198.** “**Term**” has the meaning set forth in Section 15.1 (Term).
- 1.199.** “**Terminated Country**” has the meaning set forth in Section 15.4.1 (Material Breach).
- 1.200.** “**Territory**” means worldwide.
- 1.201.** “**Third Party**” means any Person other than Arrowhead, Takeda, or their respective Affiliates.
- 1.202.** “**Third Party Distributor**” means, with respect to a country, any Third Party that purchases Products in such country from the Selling Party or its Affiliates and is appointed as a distributor to distribute, and resell such Product in such country, even if such Third Party is granted ancillary sublicensed rights under the Arrowhead Technology to package, distribute, or sell such Product in such country.
- 1.203.** “**Third Party Payment**” has the meaning set forth in Section 2.4 (In-Licenses).
- 1.204.** “**Trademark**” means any trademark, trade name, service mark, service name, brand, domain name, trade dress, logo, slogan, or other indicia of origin or ownership, including the goodwill and activities associated with each of the foregoing.
- 1.205.** “**United States**” or “**U.S.**” means the United States and its territories, possessions and commonwealths.

- 1.206. “**Valid Claim**” means: (a) a claim of an issued and unexpired patent (as may be extended through supplementary protection certificate or patent term extension or the like) that has not been revoked, held invalid, or unenforceable by a Patent Office or other Governmental Authority of competent jurisdiction from which no appeal is taken, and which claim has not been disclaimed, denied, or admitted to be invalid or unenforceable through reissue, re-examination, or disclaimer or otherwise; or (b) a pending claim of an unissued, pending patent application, which application has been pending for [\*\*\*] or less from the earliest date to which it is entitled to claim priority.
- 1.207. “**VAT**” means, within the EU, such Tax as may be charged in accordance with (but subject to derogations from) Directive 2006/112/EC and, outside the EU, value added Tax or any form of consumption Tax, as well as all other forms of Taxes charged on the supply of a good or a service, including sales Tax and goods and services Tax.
- 1.208. “**Withholding Tax**” has the meaning set forth in Section 10.4.5(b) (Withholding Taxes).

## 2. LICENSE GRANT

### 2.1. License Grants to Takeda.

2.1.1. **AAT-Specific License Grant.** Subject to the terms and conditions of this Agreement, during the Term, Arrowhead hereby grants to Takeda and its Affiliates an exclusive (even as to Arrowhead and its Affiliates, except as set forth in Section 2.6 (No Other Rights and Retained Rights)), non-transferable (except as provided in Section 17.1 (Assignment)), sublicensable (through multiple tiers, in accordance with Section 2.2 (Sublicensing Terms)) license under the Arrowhead AAT-Specific Technology to Exploit the Products in the Field and in the Territory. The foregoing license grant will be royalty-bearing in the Takeda Territory.

2.1.2. **Platform License Grant.** Subject to the terms and conditions of this Agreement, during the Term, Arrowhead hereby grants to Takeda and its Affiliates an exclusive (even as to Arrowhead and its Affiliates, except as set forth in Section 2.6 (No Other Rights and Retained Rights)), non-transferable (except as provided in Section 17.1 (Assignment)), sublicensable (through multiple tiers, in accordance with Section 2.2 (Sublicensing Terms)) license under the Arrowhead Platform Technology to Exploit the Products in the AATD Field and in the Territory. The foregoing license grant will be royalty-bearing in the Takeda Territory.

2.2. **Sublicensing Terms.** Subject to this Section 2.2 (Sublicensing Terms), Takeda or its Affiliates may grant sublicenses under Section 2.1 (License Grants to Takeda) to any Affiliate or Third Party; *provided* that [\*\*\*]. Takeda will promptly notify Arrowhead of the granting of (a) each material sublicense of Commercialization rights (excluding distribution arrangements or agreements with contract sales organizations or other Subcontractors) in any Major Market and (b) each sublicense of rights, or material extension of have made rights, with respect to Manufacturing activities in any Major Market and, in each case, the name of the applicable Sublicensee. Any such sublicense will be consistent with the terms of this Agreement and obligate the Sublicensee to comply with the applicable terms of this Agreement. Notwithstanding any sublicense, Takeda will remain primarily liable to Arrowhead for the performance of all of its obligations under, and Takeda’s compliance

with all provisions of, this Agreement, and for the performance of all obligations of its Affiliates and Sublicensees as required under this Agreement.

- 2.3. Subcontractors.** Takeda and its Affiliates may perform any of its obligations under this Agreement through one or more Subcontractors, *provided* that: (a) neither Takeda nor its Affiliates will engage any Subcontractor that has been debarred by any Regulatory Authority, (b) the Subcontractor undertakes in writing obligations of confidentiality and non-use applicable to the Confidential Information of Arrowhead that are at least as stringent as those set forth in Article 11 (Confidentiality and Publication), and (c) Takeda will be liable for any act or omission of any Subcontractor that is a breach of any of Takeda's obligations under this Agreement as though the same were a breach by Takeda. Arrowhead may perform any of its obligations under this Agreement through one or more Subcontractors set forth in the Arrowhead Development Plan or, subject to Takeda's prior written approval, not to be unreasonably withheld, through any new Subcontractor that Arrowhead proposes to engage to perform material Development activities under the Arrowhead Development Plan.
- 2.4. In-Licenses.** The Parties agree that (a) all milestone, royalty, and other payments to any Third Party in respect of any Shared In-License that are specific to the Exploitation of the Products in the Profit-Share Territory and (b) [\*\*\*], in each case ((a) and (b)), will be deemed a "**Third Party Payment**" subject to this Section 2.4 (In-Licenses).
- 2.4.1. Shared In-Licenses.** Subject to Section 2.4.2 (Shared In-License Process), Takeda may enter into any agreement for rights (whether by acquisition or license) under any Patent Rights or Know-How Controlled by a Third Party for the specific purpose of Exploiting any Product in the Profit-Share Territory (a "**Shared In-License**"). [\*\*\*].
- 2.4.2. Shared In-License Process.** [\*\*\*].
- 2.4.3. Shared In-License Payments.** [\*\*\*].
- 2.5. Knowledge and Technology Transfer.** Schedule 2.5 (Transition Plan) attached hereto sets forth a proposed outline for the plan and timeline for the transition to Takeda of Development activities related to the Compounds and the Product ongoing as of the Effective Date. Promptly following the Effective Date, the Parties, through their respective Alliance Managers, will finalize such transition plan and timeline. Subject to Section 4.2 (Assignment of Regulatory Submissions), (a) within [\*\*\*] after the Effective Date, Arrowhead will deliver to Takeda copies of the written Arrowhead Know-How that are available in the site hosted for purposes of this Agreement on Intralinks as of the Effective Date, and (b) within [\*\*\*] after the Effective Date, Arrowhead will deliver to Takeda copies of all other written Arrowhead Know-How not previously provided pursuant to clause. Each Party will use reasonable efforts to perform the activities assigned to it under Schedule 2.5 (Transition Plan). Thereafter during the Term, Arrowhead will promptly disclose to Takeda all additional Arrowhead Know-How in existence as of the Effective Date or that comes into existence as a result of performance by or behalf of Arrowhead of activities under this Agreement and not previously transferred to Takeda. Arrowhead will provide any assistance as reasonably requested by Takeda in connection with its Exploitation of the Arrowhead Know-How and the Compounds and Products for a period up to [\*\*\*] after the date on which Arrowhead delivers to Takeda such Arrowhead Know-How. [\*\*\*].

- 2.6. No Other Rights and Retained Rights.** Except as otherwise expressly provided in this Agreement, under no circumstances will a Party or any of its Affiliates, as a result of this Agreement, obtain any ownership interest, license, or other right in or to any Know-How, Patent Rights, or other intellectual property of the other Party, including tangible or intangible items owned, controlled, or developed by the other Party, or provided by the other Party to the receiving Party at any time, pursuant to this Agreement. [\*\*\*].
- 2.7. License to Arrowhead.** Subject to the terms and conditions of this Agreement, Takeda hereby grants to Arrowhead and its Affiliates a non-exclusive, non-transferable, non-sublicensable license under the Takeda Technology, solely to the extent necessary to enable Arrowhead to perform its obligations in accordance with the terms of this Agreement.
- 2.8. Exclusivity and Restrictions.**
- 2.8.1. Exclusivity Covenants.** Subject to Section 2.8.2 (Acquisition of or by Third Parties), except as expressly permitted under this Agreement, during the Term, (a) Arrowhead will not, and will ensure that its Affiliates do not, independently or for or with any Third Party, Exploit any Arrowhead Competitive Product in the Field in the Territory and (b) Takeda will not, and will ensure that its Affiliates do not, independently or for or with any Third Party, Exploit any Takeda Competitive Product in the Field in the Territory (the “**Competitive Activities**”).
- 2.8.2. Acquisitions of or by Third Parties.**
- (a) **Options.** If a Party or any of its Affiliates acquires or is acquired by a Third Party (whether such transaction occurs by way of a sale of assets, merger, consolidation, or similar transaction) and at such time such Third Party or any of its Affiliates is performing Competitive Activities with respect to one or more Competitive Products or is engaged in activities that would, upon the closing of such acquisition transaction, otherwise constitute a breach of Section 2.8.1 (Exclusivity Covenants), then such Party will provide the other Party with written notice promptly after the consummation of such acquisition transaction as permitted under applicable Law, subject to any obligations of confidentiality to such Third Party, and unless the Parties agree otherwise in writing, the acquired or acquiring Party, as applicable, will take one of the following actions set forth below in clauses (i) or (ii), and will notify the other Party of which of the actions in the following clauses (i) or (ii) the such acquired or acquiring Party will pursue:
- (i) divest, or cause its relevant Affiliates to divest, whether by license or otherwise, its interest (excluding a solely economic interest) in such Competitive Products; or
- (ii) terminate, or cause its relevant Affiliates to terminate, any further Competitive Activities with respect to such Competitive Products.
- (b) **Time Periods.** If the acquired or acquiring Party, as applicable, notifies the other Party in writing that it intends to divest the applicable Competitive Products or terminate the performance of further Competitive Activities with respect to such



Competitive Products as provided in Section 2.8.2(a) (Acquisitions of or by Third Parties; Options), then such Party or its relevant Affiliate will effect (i) the consummation of such divestiture within [\*\*\*] or such other period as may be required to comply with applicable Law or (ii) effect such termination of the applicable Competitive Activities with respect to the Competitive Product within [\*\*\*], in each case ((i) and (ii)), after the closing of the relevant acquisition transaction and will confirm to the other Party in writing when it completes such divestiture pursuant to clause (i) or termination pursuant to clause (ii). The acquired or acquiring Party will keep the other Party reasonably informed of its efforts and progress in effecting such divestiture or termination until such Party completes the same.

- (c) **Permitted Competitive Products.** (i) Neither Arrowhead nor any of its then-existing Affiliates (the “**Acquired Party**”) will be in breach of the restrictions set forth in Section 2.8.1 (Exclusivity Covenants) or Section 2.8.2 (Acquisition of or by Third Parties) if such Acquired Party undergoes a Change of Control with a Third Party (such Third Party and its Affiliates, the “**Acquiring Party**”) that is performing Competitive Activities with respect to one or more Arrowhead Competitive Products; (ii) any such Acquiring Party shall not be obligated to terminate or divest any Competitive Products pursuant to Section 2.8.2 (Acquisition of or by Third Parties) unless such Competitive Product is a Takeda Competitive Product (in which case such Acquiring Party shall terminate or divest such Takeda Competitive Product); and (iii) any such Acquiring Party shall be restricted from performing future Competitive Activities with respect to Arrowhead Competitive Products that were not Exploited prior to such Change of Control only with respect to any compound or product for the treatment of liver diseases associated with AATD, but shall not be restricted with respect to any Arrowhead Competitive Product for the treatment of diseases or conditions for any other diseases or conditions (any Competitive Products with respect to which Competitive Activities are permitted under clauses (i), (ii) and (iii) of this Section 2.8.2(c), (“**Permitted Competitive Products**”)); *provided that*, in each case ((i) through (iii)), (A) no Arrowhead Technology or Takeda Technology is used by or on behalf of such Acquired Party or Acquiring Party in connection with any subsequent performance of any such Competitive Activities with respect to any such Permitted Competitive Products, and (B) such Acquired Party or Acquiring Party institutes commercially reasonable technical and administrative safeguards to ensure the requirements set forth in the foregoing clause (A) are met, including by creating “firewalls” between the personnel working on such Permitted Competitive Products and the personnel teams charged with working on any Product (or component thereof) or having access to data from activities performed under this Agreement or Confidential Information of the Parties.

### 3. DEVELOPMENT

#### 3.1. Development Responsibility.

- 3.1.1. Arrowhead Responsibility.** Arrowhead will be solely responsible for conducting the Ongoing Development Trials and all associated Ongoing Development Activities in accordance with the Arrowhead Development Plan.
- 3.1.2. Changes to Development Plan.** [\*\*\*].
- 3.1.3. Arrowhead Development Plan.** A written plan of Development activities to be conducted by Arrowhead for ARO-AAT until completion of the Ongoing Development Trials is attached hereto as Schedule 3.1.3 (Arrowhead Development Plan) and, as such plan may be updated in accordance with this Agreement, referred to as the “**Arrowhead Development Plan.**” The Arrowhead Development Plan includes (and all updates will include) [\*\*\*]. Arrowhead, through the JSC, will propose updates to the Arrowhead Development Plan on [\*\*\*] basis. In addition, in addition to updates to be made pursuant to Section 3.1.2 (Changes to Development Plans), Arrowhead may propose updates to the Arrowhead Development Plan as necessary. The JSC will review, discuss, and determine whether to approve each such [\*\*\*] update and any other such update to the Arrowhead Development Plan.
- 3.1.4. Takeda Responsibility.** For each Product, except as set forth in Section 3.1.1 (Arrowhead Responsibility) with respect to the Ongoing Development Trials and associated Ongoing Development Activities, Takeda will have sole control over and decision-making authority for the Development of such Product, including [\*\*\*]. For the avoidance of doubt, other than with respect to the New Phase II Trial, Takeda will have sole control over and decision-making authority with respect to the conduct of all Clinical Trials for the Product, including [\*\*\*].
- 3.1.5. Co-Funded Development Plan.** At least [\*\*\*] prior to the commencement of any Co-Funded Development Activities, Takeda will prepare a detailed written plan for such activities and submit such plan to the JSC to review, discuss, and determine whether to approve. The development plan for the Co-Funded Development Activities is referred to as the “**Co-Funded Development Plan.**” The Co-Funded Development Plan will include: (a) [\*\*\*] and (b) a detailed written budget, on an activity-by-activity basis, of expected FTE Costs, Out-of-Pocket Costs, and other costs and expenses relating to the performance of such PMR/PMC Activities and Additional Studies under the Co-Funded Development Plan on a [\*\*\*] basis for the subsequent [\*\*\*], which budget will include [\*\*\*] (as may be updated by the Parties from time to time, the “**Initial Co-Funded Development Budget**”, and together with such budget in respect of each subsequent Calendar Year, each, a “**Co-Funded Development Budget**”). Takeda, through the JSC, will propose updates to the Co-Funded Development Plan on [\*\*\*] basis, and will propose a Co-Funded Development Budget for each subsequent [\*\*\*] no later than [\*\*\*] of the then-current [\*\*\*]. In addition, Takeda may propose updates to the Co-Funded Development Plan and the Co-Funded Development Budget as necessary from time-to-time during a Calendar Year. The JSC will review, discuss, and determine whether to approve the proposed Co-Funded Development Plan, including the Initial Co-Funded Development Budget, and each [\*\*\*] update and any other such proposed material update, in accordance with Section 9.2.3 (Responsibilities of JSC).

**3.2. Development Diligence Obligations.**

- 3.2.1. Arrowhead Development Diligence Obligations.** Arrowhead will use Commercially Reasonable Efforts to [\*\*\*].
- 3.2.2. Takeda Development Diligence Obligations.** Subject to Arrowhead's satisfaction of its Development diligence obligations set forth in Section 3.2.1 (Arrowhead Development Diligence Obligations), Takeda will use Commercially Reasonable Efforts to [\*\*\*].
- 3.2.3. Development and Manufacturing Expenses.**
- (a) **Co-Funded Expenses.** (i) The Parties will share the Eligible Development Expenses incurred [\*\*\*] and (ii) Arrowhead will [\*\*\*].
  - (b) **PMR/PMC Activities.** Commencing from and after the Execution Date and during the Term, the Parties will share all Eligible Development Expenses [\*\*\*] at a ratio of [\*\*\*] (Takeda: Arrowhead) (the "**Eligible Development Costs Share Ratio**") in accordance with [\*\*\*]. Within [\*\*\*] after the end of each [\*\*\*] after the Effective Date, [\*\*\*] (each such report, an "**Eligible Development Expenses Report**") and [\*\*\*]. Arrowhead will [\*\*\*].
  - (c) **Other Expenses.** Arrowhead will be solely responsible for all costs and expenses associated with (i) the Ongoing Development Activities and (ii) the Manufacture of Compounds or Products necessary for Takeda's conduct of the New Phase III Trial or such other Phase III Clinical Trials as may be required to obtain Regulatory Approval for a Product comprising ARO-AAT pursuant to Section 3.1.2 (Changes to Development Plans). Except as expressly set forth in this Section 3.2.3 (Development and Manufacturing Expenses), Takeda will be solely responsible for all costs and expenses associated with the Development of Products in the Takeda Territory.
  - (d) **Reimbursement for Additional Studies.** Prior to the commencement of each Additional Study, Takeda will submit an invoice to Arrowhead for [\*\*\*] (the "**Forecasted Additional Study Credit**"). For each Additional Study, Takeda may [\*\*\*] and (ii) [\*\*\*]. No later than [\*\*\*] following the completion of each Additional Study, Takeda will provide Arrowhead with [\*\*\*] ([\*\*\*] the "**Actual Additional Study Credit**"), and (A) if [\*\*\*] and (B) [\*\*\*].
- 3.2.4. Products Development Reports.** Each Party will keep the JSC informed regarding the progress of its respective Development activities for the Products. Following the disbandment of the JSC pursuant to Section 9.2.1 (Purpose; Formation), each Party will provide the other Party [\*\*\*] update regarding the progress of its Development activities for the Products within [\*\*\*] following the start of each [\*\*\*]. In addition, Arrowhead will provide to the JSC reasonably in advance of each meeting of the JSC a report (by means of a slide presentation or otherwise) summarizing results and describing progress made against timelines in the Arrowhead Development Plan, and Ongoing Development Activities planned to be undertaken for the Products for the next [\*\*\*], and (b) for each Product, a reasonable summary of results, information, and data generated from Clinical Trials for such Product, and updates regarding intellectual property issues (each such report, a "**Development Report**"). Arrowhead will promptly share with Takeda all other

material developments and information that it comes to possess relating to the Development of the Products conducted by or on behalf of Arrowhead, including any additional information regarding the Development of the Products reasonably requested by Takeda through the JSC from time to time to the extent and in the form readily available to Arrowhead and able to be disclosed to Takeda.

**3.3. Scientific Records.** Arrowhead (with respect to the Ongoing Development Activities) and Takeda (with respect to all other Development activities hereunder) will maintain scientific records in sufficient detail and in good scientific manner appropriate for patent and regulatory purposes, and in compliance with GLP, cGMP, and GCP with respect to activities intended to be submitted in regulatory filings (including INDs), all of which records will fully and accurately reflect all work done and results achieved in the performance of the Development activities and Clinical Trials by or on behalf of such Party with respect to Products.

#### **4. REGULATORY MATTERS**

**4.1. Regulatory Responsibilities.** Prior to the IND Transfer Date, Arrowhead will be the Regulatory Lead for all regulatory matters in the Territory relating to the Arrowhead Development Activities. Subject to Section 4.2 (Assignment of Regulatory Submissions), Takeda (itself or through its Affiliate or Sublicensee) will be solely responsible as the Regulatory Lead for all other regulatory matters in the Territory relating to the Products. Arrowhead will provide Takeda with a copy of all proposed Regulatory Submissions to be filed with or submitted to any Regulatory Authority for Takeda's review and comment sufficiently in advance of Arrowhead's filing or submission thereof, and Arrowhead will reasonably consider incorporating any reasonable comments received from Takeda into such Regulatory Submissions. Subject to Section 4.2 (Assignment of Regulatory Submissions), Takeda (itself or through its Affiliate or Sublicensee) will own all INDs, MAA, Regulatory Approvals, other Regulatory Submissions, and related regulatory documents, in the Territory with respect to such Products (in each case, as applicable). Notwithstanding any provision to the contrary set forth in this Agreement, Takeda will be the Regulatory Lead for all meetings with applicable Regulatory Authorities upon the end of the New Phase II Trial.

#### **4.2. Assignment of Regulatory Submissions.**

##### **4.2.1. Clinical Trial Regulatory Submissions.**

- (a) **Clinical Trial Regulatory Submissions.** Within [\*\*\*] after the Data Read-Out for the New Phase II Trial, or such other date as the Parties may agree, Arrowhead will transfer and assign to Takeda all rights, title, sponsorship, and interests in and to the Clinical Trial Regulatory Submissions and assist Takeda with such transfer and assignment. The date of such transfer will be the "**IND Transfer Date.**" Takeda will take over as Regulatory Lead for all Products on the IND Transfer Date. Prior to or on the IND Transfer Date, Arrowhead will submit written notification to the FDA informing it of the transfer of the Clinical Trial Regulatory Submissions from Arrowhead to Takeda. Arrowhead will provide reasonable assistance from Arrowhead's FTEs at no cost to Takeda as set forth in Section 2.5 (Knowledge and Technology Transfer).

- (b) **Other Assigned Regulatory Submissions.** Promptly after the IND Transfer Date, Arrowhead will transfer or otherwise make available to Takeda copies (in electronic or other format) of other Regulatory Approvals or Regulatory Submissions in the Territory Controlled by Arrowhead or its Affiliates as of the IND Transfer Date and not transferred to Takeda prior to the IND Transfer Date pursuant to Section 4.2.1(a) (Clinical Trial Regulatory Submissions), to the extent such materials specifically relate to the Compounds or any Product. No later than [\*\*\*] after the completion of all transition activities set forth in this Section 4.2.1(b) (Other Assigned Regulatory Submissions), Arrowhead will send a letter to each applicable Regulatory Authority to record and notify such Regulatory Authority of the transfer to Takeda of all Regulatory Approvals and Regulatory Submissions for all Products.
- (c) **Clinical Trial Data.** In connection with the transfer of Regulatory Submissions provided for in this Section 4.2.1 (Clinical Trial Regulatory Submissions), Arrowhead will provide to Takeda separate copies (in electronic or other format) of the study reports and underlying data (to the extent not previously provided to Takeda) from the Ongoing Development Activities.

**4.2.2. Other Regulatory Submissions.** To the extent not addressed in Section 4.2.1 (Clinical Trial Regulatory Submissions), (a) Arrowhead will transfer and assign to Takeda, upon a date to be agreed by the JSC (or, with respect to any orphan drug designation, within [\*\*\*] after the Effective Date), all of Arrowhead's rights, title, and interests in and to all INDs, MAAs, and other Regulatory Approvals or Regulatory Submissions in the Territory for the Compounds or any Product; (b) the Parties will complete all other transition activities of such transition to Takeda of the Regulatory Lead within [\*\*\*] after the Effective Date; and (c) no later than [\*\*\*] after the completion of all transition activities set forth in the foregoing clause (b), Arrowhead will send a letter to each Regulatory Authority as applicable to a specific country or jurisdiction to record and notify such Regulatory Authority of the transfer to Takeda of all Regulatory Approvals and Regulatory Submissions for such Compound in such country or jurisdiction.

**4.2.3. Cooperation.** Subject to the terms and conditions of this Agreement, within a reasonable time following Takeda's request, Arrowhead will execute and deliver, or will cause to be executed and delivered, to Takeda such endorsements, assignments, and other documents as may be reasonably necessary to assign, convey, transfer, and deliver to Takeda all of Arrowhead's rights, title, and interests in and to the Assigned Regulatory Submissions. Schedule 4.2.3 (Regulatory Submissions Dates) sets forth upcoming dates of Regulatory Submission for each of the Compounds as of the Execution Date.

**4.3. Takeda Obligations.** Takeda will provide Arrowhead, through the JSC at least [\*\*\*], with written notice of each of the following events with regard to each Product for which Takeda is the Regulatory Lead: (a) to the extent notice was not previously provided, the submission to the applicable Regulatory Authorities of any filings or applications for Regulatory Approval of such Products in the Profit-Share Territory; and (b) all Regulatory Submissions (as well as orphan drug applications and designations) that were filed for any Products in the Profit-Share Territory during such preceding [\*\*\*]; *provided, however*, that Takeda will inform Arrowhead of such event under (a) or (b) prior to public disclosure of such event by Takeda.

**4.4. Costs of Regulatory Affairs.** Except as otherwise expressly provided in this Article 4 (Regulatory Matters), (a) the Parties will share the costs and expenses associated with obtaining and maintaining Regulatory Approval for the Products in the Profit-Share Territory, and related regulatory affairs activities as set forth in this Article 4 (Regulatory Matters) for such Product in the Profit-Share Territory as Other Operating Expenses, accordance with Section 10.2.1 (Profit and Loss Share) and (b) except as otherwise expressly set forth in this Agreement, Takeda will be solely responsible for all costs and expenses associated with obtaining and maintaining Regulatory Approval in the Takeda Territory for the Products.

**4.5. Pharmacovigilance Agreement.** As soon as reasonably practicable (and in any event no later than [\*\*\*) following the Effective Date, the Parties will use good faith efforts to negotiate and execute a pharmacovigilance agreement, on reasonable and customary terms that will provide, among other things, guidelines and responsibilities for (a) the receipt, investigation, recording, review, communication, reporting, and exchange between the Parties of Adverse Event reports and other safety information relating to the Compounds and Products, (b) appropriate reconciliation procedures to ensure adequate and compliant exchange of safety data, (c) contact with Regulatory Authorities with respect to the foregoing, and (d) the maintenance of a global safety database with respect to the Compounds and Products, in each case ((a) – (d)), in accordance with applicable Law (the “**Pharmacovigilance Agreement**”). The Pharmacovigilance Agreement will contain terms no less stringent than those required by ICH or other applicable guidelines in order to allow the Parties to meet the applicable regulatory and legal requirements regarding the management of safety data in their respective territories. Pending entry into such Pharmacovigilance Agreement, the Parties will, if necessary, within [\*\*\*) following the Effective Date implement an interim procedure for exchange of any and all information concerning all Adverse Events related to use of the Product.

## **5. OTHER OPERATING EXPENSES**

**5.1. Other Operating Expenses.** No later than [\*\*\*) following the Effective Date, Takeda will prepare a reasonably detailed, written budget, on a [\*\*\*) basis, of the following categories of Other Operating Expenses anticipated to be incurred by Takeda in the performance of Exploitation activities or sublicensing activities for the Products in the Profit-Share Territory: (a) [\*\*\*)], (b) [\*\*\*)], and (c) [\*\*\*)] (as may be updated by Takeda from time to time, the “**Initial Other Operating Expenses Budget**”, and together with such budget in respect of each subsequent Calendar Year, each, an “**Other Operating Expenses Budget**”). Takeda, through the JSC, will propose an Other Operating Expenses Budget for each subsequent [\*\*\*) no later than [\*\*\*) of the then-current [\*\*\*)]. In addition, Takeda may propose updates to the Other Operating Expenses Plan and the Other Operating Expenses Budget as reasonably necessary from time-to-time during a Calendar Year. The JSC will review, discuss, and determine whether to approve the proposed Initial Other Operating Expenses Budget, and each [\*\*\*) update and any other such proposed update in accordance with Section 9.2.3 (Responsibilities of JSC).

## **6. MANUFACTURING**

### **6.1. Initial Manufacturing Period.**

**6.1.1. Arrowhead Manufacturing Activities.** Subject to the authority of the JSC, during the Initial Manufacturing Period, Arrowhead will be responsible for all Manufacturing activities for Clinical Trial Material for the Current Product, including, as applicable, all

CMC activities and stability studies and the Manufacture and supply of the quantity of Clinical Trial Material required for the conduct of the Current Phase II/III Clinical Trial or New Clinical Trial, as applicable (the “**Arrowhead Manufacturing Activities**”). The “**Initial Manufacturing Period**” will commence on the Effective Date and continue until the earliest to occur of (a) the date on which Takeda confirms that the Manufacturing Technology Transfer for the Current Product is complete, such that Takeda’s (or its designee’s) facilities has been qualified and otherwise received all Regulatory Approvals required to Manufacture such Product, and (b) the delivery by Arrowhead of all of the quantities of Clinical Trial Material required for Takeda’s conduct of the New Phase III Trial or such other Phase III Clinical Trial as is required to obtain Regulatory Approval for a Product comprising ARO-AAT pursuant to Section 3.1.2 (Changes to Development Plans), and will allocate sufficient reserved capacity for the foregoing. During the Initial Manufacturing Period, Arrowhead may conduct the Arrowhead Manufacturing Activities itself or through [\*\*\*] or any other CMO approved in writing by Takeda. Arrowhead will be solely responsible for all Manufacturing Costs that it incurs in performing the Arrowhead Manufacturing Activities, whether itself or through a Third Party, during the Initial Manufacturing Period.

- 6.1.2. Manufacturing Working Group.** Notwithstanding Arrowhead’s responsibility for the Arrowhead Manufacturing Activities, within [\*\*\*] after the Effective Date, the JSC will establish a manufacturing working group (“**MWG**”) that will (a) facilitate and monitor the Arrowhead Manufacturing Activities; (b) evaluate and select a replacement CMO for drug product; (c) prepare a plan for the conduct of the Manufacturing Technology Transfer described in Section 6.4 (Manufacturing Technology Transfer); and (d) ensure such other plans and processes are developed to enable uninterrupted supply of Clinical Trial Materials under and in accordance with this Agreement and the CTM Supply Agreement. The MWG will include representatives from each Party’s pharmaceutical science, manufacturing and supply, and quality groups.
- 6.1.3. Manufacture by CMO.** Unless otherwise agreed by the Parties, if Arrowhead is performing the Arrowhead Manufacturing Activities through one or more CMOs, then, in connection with the transition of Manufacturing responsibility to Takeda, the Parties will discuss in good faith the assignment or transfer to Takeda of the agreements between Arrowhead and one or more of such CMOs. Arrowhead will use reasonable efforts to ensure that any such agreement between Arrowhead and such a CMO that is specific to a Product under this Agreement permits Arrowhead to assign such agreement to Takeda.
- 6.1.4. CTM Supply Agreement.** No later than [\*\*\*] after the Effective Date, the Parties will negotiate in good faith the terms of an agreement for the Manufacture and supply to Takeda of the Clinical Trial Material for each applicable Product (the “**CTM Supply Agreement**”), which CTM Supply Agreement will include the terms set forth on Schedule 6.1.4 (CTM Supply Agreement Term Sheet). The CTM Supply Agreement will include customary terms for supply of material to a collaboration partner for Clinical Trials. The CTM Supply Agreement will be subordinate to this Agreement.
- 6.1.5. Arbitration for Failure to Agree.** If the Parties cannot reach agreement and enter into the CTM Supply Agreement within the applicable period set forth in Section 6.1.4 (CTM

Supply Agreement), then the final terms and conditions of such CTM Supply Agreement will be determined through binding arbitration as follows:

- (a) [\*\*\*].
- (b) [\*\*\*].
- (c) [\*\*\*].
- (d) [\*\*\*].

**6.1.6. Takeda's Assumption of Manufacturing Responsibility.** Takeda will have the right, at its election [\*\*\*], to assume all Manufacturing responsibilities for the Products on terms to be set forth in additional detail in the plan for the Manufacturing Technology Transfer to be agreed pursuant to Section 6.4 (Manufacturing Technology Transfer). Arrowhead will work collaboratively and in good faith with Takeda to complete the Manufacturing Technology Transfer in order to enable Takeda to so Manufacture the Products.

**6.2. Supply After the Initial Manufacturing Period.** After Takeda assumes responsibility for the Manufacture of the Products, then following successful Manufacturing Technology Transfer as set forth in Section 6.4 (Manufacturing Technology Transfer), Takeda will have sole control over and decision-making authority with respect to, all Manufacturing activities for the Manufacture of the Products and responsibility for all costs and expenses associated therewith.

**6.3. Observation by Takeda.** Arrowhead will provide Takeda with the opportunity, upon Takeda's reasonable request during normal business hours, to observe the Manufacturing processes and procedures for the Compounds and Products (*e.g.*, review assays, batch records, and release processes and procedures) for the purpose of enabling Takeda (or a Third Party CMO designated by Takeda) to Manufacture the Compounds and Products pursuant to Section 6.4 (Manufacturing Technology Transfer). If Arrowhead utilizes a CMO for the Manufacture of any Compound or Product, then Arrowhead will take reasonable actions, including entering into a three-party agreement with Takeda and such CMO, to enable Takeda to exercise its rights under this Section 6.3 (Observation by Takeda). For the avoidance of doubt, all information learned or observed by Takeda in connection with such observations that otherwise falls within the definition of Arrowhead Know-How, will be Arrowhead Know-How licensed to Takeda and subject to the non-use and non-disclosure obligations set forth herein.

**6.4. Manufacturing Technology Transfer.** In addition to the initial technology transfer set forth in Section 2.5 (Knowledge and Technology Transfer), upon Takeda's election to assume Manufacturing responsibility pursuant to Section 6.1.6 (Takeda's Assumption of Manufacturing Responsibility), Arrowhead will work with Takeda to transfer to Takeda (a) all Arrowhead Know-How that is necessary or that has been identified by either Party as reasonably useful to enable the Manufacture of the Compounds and Products, to the extent not previously transferred to Takeda under this Agreement, by providing copies or samples of relevant documentation, materials, and other embodiments of any such Arrowhead Know-How, and by making available its qualified technical personnel on a reasonable basis to consult with Takeda with respect to such Know-How, and (b) subject to the conditions in this Section 6.4 (Manufacturing Technology Transfer), any materials (as well as any intermediates and impurities of such materials) used by Arrowhead or its



Affiliates or Subcontractors in the Manufacture of such Product (the “**Manufacturing Technology Transfer**”). The Manufacturing Technology Transfer will be conducted pursuant to and will be subject to a written plan developed and agreed by the Parties in good faith at least [\*\*\*] prior to the anticipated commencement of the Manufacturing Technology Transfer, the purpose of which plan will be to carry out the complete and timely transfer of such Arrowhead Know-How in a manner that is consistent with then-current reasonable internal technology transfer corporate standards (or equivalent policy) of Takeda. Without limiting the foregoing, in connection with the development of the Manufacturing Technology Transfer plan, Arrowhead will identify to Takeda any Third Party intellectual property used by Arrowhead in the Manufacture of the Products that may contain restrictions or conditions applicable to the use thereof by or on behalf of Takeda. If requested by Takeda, Arrowhead will use reasonable efforts to facilitate Takeda’s access to or right to use or have used any such Third Party intellectual property.

- 6.5. **Arrowhead Manufacturing Support.** Following the Manufacturing Technology Transfer contemplated by Section 6.4 (Manufacturing Technology Transfer) it may be necessary for Takeda from time to time to seek assistance and cooperation from Arrowhead in connection with the Manufacture of Products, including with respect to scale-up activities. Arrowhead will use reasonable efforts to provide any such assistance and cooperation reasonably requested by Takeda within [\*\*\*] following the completion of the Manufacturing Technology Transfer. [\*\*\*].

## 7. COMMERCIALIZATION

### 7.1. Commercialization of the Products.

7.1.1. **Co-Funded Commercialization Plan.** No later than [\*\*\*] prior to the anticipated First Commercial Sale for each Product in the Profit-Share Territory, Takeda will prepare a reasonably detailed written plan for Commercialization of the Products in the Profit-Share Territory (as may be updated from time to time, a “**Co-Funded Commercialization Plan**,” and the Commercialization activities described in the Co-Funded Commercialization Plan, the “**Co-Funded Commercialization Activities**”) and submit such plan to the JSC to review and discuss such plan. The Co-Funded Commercialization Plan will include: (a) [\*\*\*] and (b) a detailed, written budget of the expected FTE Costs, Out-of-Pocket Costs, and other costs and expenses within Eligible Shared Expenses for such Commercialization activities on a [\*\*\*] basis for the subsequent [\*\*\*], including [\*\*\*] (as may be updated by Takeda from time to time, the “**Initial Co-Funded Commercialization Budget**”, and together with such budget in respect of each subsequent [\*\*\*], each, a “**Co-Funded Commercialization Budget**”). Takeda, through the JSC, will propose updates to the Co-Funded Commercialization Plan on [\*\*\*] basis, and will propose a Co-Funded Commercialization Budget for the subsequent [\*\*\*] no later than [\*\*\*] of the then-current [\*\*\*]. In addition, Takeda may propose updates to the Co-Funded Commercialization Plan and the Co-Funded Commercialization Budget as necessary from time-to-time during a [\*\*\*]. The JSC will review, discuss and determine whether to approve the proposed Co-Funded Commercialization Plan, including the Initial Co-Funded Commercialization Budget, and each [\*\*\*] update and any other such proposed material update in accordance with Section 9.2.3 (Responsibilities of JSC).

7.1.2. **Commercialization Diligence Obligations.** Takeda will use Commercially Reasonable Efforts to perform the Co-Funded Commercialization Activities under the Co-Funded

Commercialization Plan and to otherwise Commercialize each Product in each Major Market in which such Product receives Marketing Approval. Takeda will have no other diligence obligations under this Agreement to Commercialize any Products, and Arrowhead's sole and exclusive remedy with respect to any breach of Takeda's diligence obligations under this Section 7.1.2 (Commercialization Diligence Obligations) will be its right to terminate this Agreement in accordance with Section 15.4 (Termination for Material Breach).

**7.1.3. Commercialization Responsibility.** As between the Parties, Takeda will lead and have sole control over and decision-making authority with respect to all Commercialization activities in the Profit-Share Territory and in the Takeda Territory.

**7.2. Commercialization Expenses.** The Parties will share the Eligible Commercialization Expenses for all Products for the Profit-Share Territory as set forth in Section 10.2.1 (Profit and Loss Share), and Takeda will be solely responsible for all costs and expenses relating to the Commercialization of all Products in the Takeda Territory.

**7.3. Recalls, Market Withdrawals, or Corrective Actions.** Prior to the time that Takeda assumes responsibility for the Manufacture of the Products, either Party may decide whether to conduct any recall or other similar market withdrawal or other action for any Product and the manner in which any such recall will be conducted (including any such recall requested by a Regulatory Authority). After Takeda assumes responsibility for the Manufacture of the Products, Takeda will have the sole right to decide whether to conduct any recall or other similar market withdrawal or other action for any Product and the manner in which any such recall will be conducted (including any such recall requested by a Regulatory Authority). The Parties will share the applicable expenses incurred pursuant to this Section 7.3 (Recalls, Market Withdrawals, or Corrective Actions) for such Product in the Profit-Share Territory in accordance with Section 10.2.1 (Profit and Loss Share) and Takeda will bear all such costs and expenses for all Products in the Takeda Territory, subject to Article 13 (Indemnification; Limitation of Liability; Insurance).

## **8. MEDICAL AFFAIRS**

**8.1. Co-Funded Medical Affairs Plan.** No later than [\*\*\*] prior to the anticipated First Commercial Sale for a Product in the Profit-Share Territory, Takeda will prepare a reasonably detailed written plan for the Medical Affairs activities and any other activities related to patient advocacy or health economics and outcomes research, in each case, for Products in the Profit-Share Territory (as may be updated from time to time, the "**Co-Funded Medical Affairs Plan**," and all activities set forth under the Co-Funded Medical Affairs Plan, the "**Co-Funded Medical Affairs Activities**"), and submit such plan to the JSC for its review and discussion. The Co-Funded Medical Affairs Plan for a Product will contain (a) [\*\*\*], (b) [\*\*\*], and (c) a written budget of the expected FTE Costs and Out-of-Pocket Costs for all activities under the Co-Funded Medical Affairs Plan on a [\*\*\*] basis for the subsequent [\*\*\*] (as may be updated by Takeda from time to time, the "**Initial Co-Funded Medical Affairs Budget**", and together with such budget in respect of each subsequent [\*\*\*], each, a "**Co-Funded Medical Affairs Budget**"). Takeda, through the JSC, will propose updates to the Co-Funded Medical Affairs Plan on [\*\*\*] basis, and will propose a Co-Funded Medical Affairs Budget for each subsequent [\*\*\*] no later than [\*\*\*] of the then-current [\*\*\*]. In addition, Takeda may propose updates to the Co-Funded Medical Affairs Plan and the Co-Funded Medical Affairs Budget as reasonably necessary from time-to-time during a [\*\*\*]. The JSC will

review, discuss, and determine whether to approve the proposed Co-Funded Medical Affairs Plan, including the Initial Co-Funded Medical Affairs Budget, and each annual update thereto and any other such proposed material update in accordance with Section 9.2.3 (Responsibilities of JSC).

**8.2. Products Medical Affairs Expenses.** The Parties will share the Eligible Medical Affairs Expenses for all Products for the Profit-Share Territory as set forth in Section 10.2.1 (Profit and Loss Share), and Takeda will be solely responsible for all costs and expenses relating to Medical Affairs for all Products in the Takeda Territory.

## **9. GOVERNANCE**

**9.1. Alliance Manager.** Promptly following the Effective Date each Party will designate an individual to facilitate communication and coordination of the Parties' activities under this Agreement relating to the Products and to provide support and guidance to the JSC, including preparing agendas, meeting materials, and meeting minutes for JSC meetings (each, an "**Alliance Manager**"). Each Alliance Manager may, but is not required to, serve as a representative of its respective Party on the JSC, but the Alliance Managers or suitable designees will attend all meetings of the JSC. The Alliance Managers may bring to the attention of the JSC any matters or issues either of them reasonably believes should be discussed by the JSC. Each Party may replace its Alliance Manager at any time by written notice to the other Party. The Alliance Managers will be responsible for creating and maintaining a constructive work environment between the Parties. Without limiting the generality of the foregoing, the Alliance Managers will: (a) identify and timely bring to the attention of their respective managements any disputes arising between the Parties related to this Agreement; (b) provide a single point of communication between the Parties with respect to this Agreement and the Parties' respective activities hereunder; (c) ensure that meetings of the JSC occur as set forth in this Agreement, that procedures are followed with respect to such meetings (including the giving of proper notice and the preparation and approval of minutes) and that relevant action items resulting from such meetings are appropriately carried out or otherwise addressed; and (d) undertake such other responsibilities as the Parties may mutually agree in writing.

### **9.2. Joint Steering Committee.**

**9.2.1. Purpose; Formation.** Within [\*\*\*] after the Effective Date, the Parties will establish a joint steering committee (the "**JSC**") that will monitor and provide strategic oversight of the activities under this Agreement and facilitate communication between the Parties, in each case, with respect to the Development of all Products and Commercialization of the Products in the Profit-Share Territory, all in accordance with the terms of this Agreement. The JSC will disband upon the earlier of (a) the date on which there are no Products being Exploited in the Profit-Share Territory and (b) the receipt of Regulatory Approval of the Current Product in each Major Market.

**9.2.2. Composition.** Each Party will initially appoint [\*\*\*] representatives to the JSC, with each representative having knowledge and expertise in the Exploitation of assets and products similar to the Products, and having sufficient seniority within the applicable Party to provide meaningful input and make decisions arising within the scope of the JSC's responsibilities. The JSC may change its size from time to time by [\*\*\*] of the Parties, *provided* that, unless otherwise agreed by the Parties in writing, the JSC will consist at all times of [\*\*\*] of representatives of each Party. Each Party may replace its JSC

representatives at any time upon written notice to the other Party. The JSC may invite non-members to participate in the discussions and meetings of the JSC, but such participants will have no voting authority at the JSC and must be bound under written obligations of confidentiality no less protective of the Parties' Confidential Information than those set forth in this Agreement. The Alliance Managers will prepare and circulate agendas and ensure the preparation and approval of minutes.

**9.2.3. Responsibilities of JSC.** In addition to its overall responsibility for monitoring and providing strategic oversight with respect to the Parties' activities with respect to the Development of all Products and Commercialization of the Products under this Agreement, the JSC will have the following responsibilities:

- (a) review, discuss, and determine whether to approve (i) the Co-Funded Development Plan, Co-Funded Development Budget, and any updates thereto (ii) [\*\*\*], and (iii) [\*\*\*];
- (b) review, discuss, and determine whether to approve (i) the Co-Funded Commercialization Plan, Co-Funded Commercialization Budget, and any updates thereto, (ii) Co-Funded Medical Affairs Plan, Co-Funded Medical Affairs Budget, and any updates thereto, (iii) [\*\*\*], (iv) [\*\*\*];
- (c) review, discuss, and determine whether to approve an amendment to the Current Phase II/III Trial to reflect the New Phase II Trial and New Phase III Trial, as described in Section 3.1.2 (Changes to Development Plan);
- (d) review, discuss, and determine whether to approve any proposed amendments to the Arrowhead Development Plan, as described in Section 3.1.3 (Arrowhead Development Plan);
- (e) review, discuss, and determine whether to approve any proposed material amendments to the Co-Funded Development Plan, as described in Section 3.1.5 (Co-Funded Development Plan);
- (f) review, discuss, and determine the appropriate course of action in the event of a safety signal with respect to a Product or a recall decision by any Regulatory Authority with respect to a Product;
- (g) review discuss, and determine whether to approve any proposed material amendments to the Co-Funded Commercialization Plan, as described in Section 7.1.1 (Co-Funded Commercialization Plan);
- (h) review discuss, and determine whether to approve any proposed material amendments to the Co-Funded Medical Affairs Plan, as described in Section 8.1 (Co-Funded Medical Affairs Plan);
- (i) [\*\*\*];

- (j) review and discuss any proposed publication by either Party, as described in Section 11.2 (Publication and Publicity);
- (k) review, discuss, and determine, if requested by either Party, an alternate timeframe for Takeda's negotiation of an agreement with a qualified vendor for purposes of the transfer and storage of inventory of Product or for Arrowhead's transfer to Takeda of inventory of one or more Compounds, as described on Schedule 2.5 (Transition Plan);
- (l) serve as a forum for exchange of information for the Parties in relation to the Products, or any activities undertaken by or on behalf of either Party under this Agreement, including Development Reports, as described in Section 3.2.4 (Products Development Reports) and notices and Regulatory Submissions, as described in Section 4.3 (Takeda Obligations);
- (m) establish a MWG, as described in Section 6.1.2 (Manufacturing Working Group);
- (n) [\*\*\*];
- (o) form such other committees or working groups under the JSC as may be necessary or desirable to facilitate the activities under this Agreement as the Parties may agree and oversee the activities of any such other committees or working groups;
- (p) attempt to resolve any disputes on matters within the JSC's authority on an informal basis and in good faith prior to the institution of escalation or other formal dispute resolution mechanisms hereunder; and
- (q) perform such other functions expressly allocated to the JSC in this Agreement or by the written agreement of the Parties.

**9.2.4. JSC Meetings.** The JSC will meet at least [\*\*\*] unless the Parties mutually agree in writing to a different frequency. No later than [\*\*\*] prior to any meeting of the JSC (or such shorter time period as the Parties may agree), the Alliance Managers will prepare and circulate an agenda for such meeting; *provided, however*, that either Party may propose additional topics to be included on such agenda, either prior to or in the course of such meeting. Either Party may also call a special meeting of the JSC (by videoconference, teleconference, or in person) by providing at least [\*\*\*] prior written notice to the other Party if such Party reasonably believes that a significant matter must be addressed prior to the next scheduled meeting, in which event such Party will work with the Alliance Managers to provide the members of the JSC, no later than [\*\*\*] prior to the special meeting, with an agenda for the meeting and materials reasonably adequate to enable an informed decision on the matters to be considered. In addition to any items set forth on the agenda for a meeting of the JSC, at each meeting of the JSC, Takeda will provide an update on all activities performed by or on behalf of Takeda in connection with the Exploitation of the Products since the last meeting of the JSC, and evaluate the activities performed against all relevant plans. The JSC may meet in person, by videoconference or by teleconference. In-person JSC meetings will be held at agreed locations. Each Party will bear the expense of its respective JSC members' participation in JSC meetings. Meetings

of the JSC will be effective only if at least [\*\*\*] of each Party (which [\*\*\*] is not such Party's Alliance Manager) is present or participating in such meeting. The Alliance Managers will be responsible for preparing reasonably detailed written minutes of all JSC meetings that reflect material decisions made and action items identified at such meetings. The Alliance Managers will send draft meeting minutes to each member of the JSC for review and approval within [\*\*\*] after each JSC meeting. Such minutes will be deemed approved unless [\*\*\*] members of the JSC object to the accuracy of such minutes within [\*\*\*] of receipt.

**9.3. Decisions of the JSC.** The JSC has the authority (a) for matters specifically delegated to it or expressly specified in this Agreement and (b) with respect to any other matter agreed to by the Parties in writing. All decisions of the JSC will be made by [\*\*\*] vote, with each Party's representatives having one vote (*i.e.*, one vote per Party). No action taken at any meeting of the JSC will be effective unless there is a quorum at such meeting, and at all such meetings, a quorum will be reached if [\*\*\*] voting representatives of each Party are present or participating in such meeting. For clarity, the JSC will not have any power to amend, modify, or waive compliance with this Agreement. The JSC has no other authority under this Agreement than what is expressly granted under this Agreement. The JSC will use good faith, commercially reasonable efforts in compliance with this Section 9.3 (Decisions of the JSC) to promptly resolve any such matter for which it has authority. If the JSC is unable to reach consensus with respect to any such matter for which it is responsible within [\*\*\*] after a Party affirmatively states to the other Party that a decision needs to be made, then such matter will be subject to Section 9.4 (Resolution of JSC Disputes).

**9.4. Resolution of JSC Disputes.**

**9.4.1. Referral to Executive Officers.** Either Party may make an election under Section 9.3 (Decisions of the JSC) to refer a matter as to which the JSC cannot reach a consensus decision to the Executive Officers, following which the JSC will promptly submit in writing the respective positions of the Parties to their respective Executive Officers. Such Executive Officers will use good faith efforts, in compliance with this Section 9.4.1 (Referral to Executive Officers), to resolve promptly such matter within [\*\*\*] after the JSC's submission of such matter to such Executive Officers, which good faith efforts will include [\*\*\*].

**9.4.2. Final Decision-Making Authority.** If the Executive Officers are unable to reach agreement on any such matter referred to them under Section 9.4.1 (Referral to Executive Officers) within the applicable [\*\*\*] period, then:

(a) **No Decision.** Neither Party will have final decision-making authority on [\*\*\*].

(b) **Takeda Final Decision-Making Authority.** [\*\*\*].

**9.4.3. Eligible Shared Expense Disputes.** [\*\*\*].

**9.4.4. Limitations on Decisions.** Notwithstanding any provision to the contrary set forth in this Agreement, without the other Party's prior written consent, no exercise of a Party's decision-making authority on any such matters may, without the other Party's prior written consent, (a) [\*\*\*], (b) [\*\*\*], or (c) otherwise conflict with, or constitute a modification of or waiver under, this Agreement.

**10. PAYMENTS**

**10.1. Upfront Payment.** Within [\*\*\*] after Takeda’s receipt of an invoice from Arrowhead, to be submitted promptly following the Effective Date, in consideration of the licenses granted to Takeda hereunder, Takeda will pay to Arrowhead a non-refundable, non-creditable upfront payment in the amount of \$300,000,000 via wire transfer of immediately available funds in accordance with the instructions attached hereto as Schedule 10.4.1 (Wire Instructions).

**10.2. Payments for the Compounds and Products.**

**10.2.1. Profit and Loss Share.** Arrowhead and Takeda will share the Operating Profits or Losses for all Products in the Profit-Share Territory as follows: Takeda will bear (and be entitled to) 50%, and Arrowhead will bear (and be entitled to) 50%, of such Operating Profits or Losses. Schedule 10.2.1 (Profit and Loss Share) sets forth the procedures for [\*\*\*] reporting of actual results and review and discussion of potential discrepancies, [\*\*\*] reconciliation, reasonable forecasting, and other finance and accounting matters. To the extent Arrowhead, in bearing 50% of Operating Profits or Losses for the Profit-Share Territory [\*\*\*], [\*\*\*], [\*\*\*].

**10.2.2. Milestone Payments.**

(a) **Development Milestones.** Subject to this Section 10.2.2(a) (Development Milestones), either (i) Takeda will make one-time milestone payments (each, an “**Development Milestone Payment**”) to Arrowhead upon the first achievement by Takeda or its Affiliates or Sublicensees of each of the development milestone events set forth in Table 10.2.2(a)(i) (Development Milestones – Scenario A) below (each, an “**Development Milestone Event**”) for the first Product to achieve the applicable Development Milestone Event, [\*\*\*], [\*\*\*], or (ii) Takeda will make Development Milestone Payments to Arrowhead upon the first achievement by Takeda or its Affiliates or Sublicensees of each of the Development Milestone Events set forth in Table 10.2.2(a)(ii) (Development Milestones – Scenario B) below for the first Product to achieve the applicable Development Milestone Event, [\*\*\*], [\*\*\*]. Takeda will notify Arrowhead in writing of the achievement of a Development Milestone Event by Takeda or its Affiliates or Sublicensees no later than [\*\*\*] after the achievement thereof. Thereafter, Arrowhead will provide Takeda with an invoice for the corresponding Development Milestone Payment, and Takeda will pay to Arrowhead such Development Milestone Payment no later than [\*\*\*] after its receipt of an invoice for such Development Milestone Payment. For the avoidance of doubt, a given Product may achieve the Development Milestone Events set forth in one of the following Tables (Table 10.2.2(a)(i) (Development Milestones – Scenario A) or Table 10.2.2(a)(ii) (Development Milestones – Scenario B)), but not both Tables.

<b>Table 10.2.2(a)(i) –Development Milestones – Scenario A</b>	
<i>Development Milestone Event</i>	<i>Development Milestone Payment</i>
[***]	[***]
[***]	[***]
[***]	[***]
[***]	If (i): [***]  or  if (ii): [***]

<b>Table 10.2.2(a)(ii) –Development Milestones – Scenario B</b>	
<i>Development Milestone Event</i>	<i>Development Milestone Payment</i>
[***]	[***]
[***]	[***]
[***]	[***]
[***]	[***]

(b) **Commercial Milestones.** Subject to this Section 10.2.2(b) (Commercial Milestones), Takeda will make one-time commercial milestone payments (each, a “**Commercial Milestone Payment**”) and together with the Development Milestone Payments, the “**Milestone Payments**”) to Arrowhead upon the achievement by Takeda or its Affiliates or Sublicensees of each of the sales-based milestones events set forth in Table 10.2.2(b) (Commercial Milestones) below (each, a “**Commercial Milestone Event**”) and together with the Development Milestone Events, the “**Milestone Events**”) with respect to the aggregate annual Net Sales of all Products in the Territory, *provided* that Net Sales of any Product in any country in the Territory will not be included after the Royalty Term for such Product and country has ended. Takeda will notify Arrowhead in writing of the achievement of a Commercial Milestone Event by Takeda or its Affiliates or Sublicensees no

later than [\*\*\*] after the end of the [\*\*\*] in which such Commercial Milestone Payment is payable pursuant to the preceding sentence. Thereafter, Arrowhead will provide Takeda with an invoice for the corresponding Commercial Milestone Payment, and Takeda will pay to Arrowhead such Commercial Milestone Payment no later than [\*\*\*] after receipt of the applicable invoice from Arrowhead.

<b>Table 10.2.2(b) –Commercial Milestones</b>	
<i>Commercial Milestone Event</i>	<i>Commercial Milestone Payment</i>
[***]	[***]



***	***
***	***
***	***
***	***
***	***

**10.2.3. Milestone Credits and Adjustments.**

(a) **Additional Studies Credit.** Takeda will \*\*\* (i) \*\*\* and (ii) \*\*\*.

**10.2.4. Takeda Territory Royalties.** During the Royalty Term for each Product in each country in the Takeda Territory and subject to the provisions of Section 10.2.5 (Royalty Reductions), Takeda will pay to Arrowhead Royalties in the amount of the marginal Royalty Rates set forth in Table 10.2.4 (Royalty Payments (Takeda Territory)) below, based on the aggregate Net Sales resulting from the sale of all Products in the Takeda Territory during each \*\*\* until the expiration of the applicable Royalty Term (for each Product, the “**Annual Takeda Territory Net Sales,**” and such payments, “**Royalties**”).

<b>TABLE 10.2.4 –Royalty Payments (Takeda Territory)</b>	
<i>Annual Takeda Territory Net Sales</i>	<i>Marginal Royalty Rate (% of Annual Takeda Territory Net Sales)</i>
The portion of Annual Takeda Territory Net Sales less than or equal to ***	20%
The portion of Annual Takeda Territory Net Sales greater *** and less than or equal to ***	***
The portion of Annual Takeda Territory Net Sales greater than *** and less than or equal to ***	***
The portion of Annual Takeda Territory Net Sales greater than ***	25%

**10.2.5.** \*\*\*.

- (a) \*\*\*.
- (b) \*\*\*.
- (c) \*\*\*.
- (d) \*\*\*.

**10.3. Other Amounts Payable.** With respect to any amounts owed under this Agreement by one Party to the other for which no other invoicing and payment procedure is specified in this Agreement, within \*\*\* after the end of each \*\*\* each Party will provide an invoice, together with reasonable supporting documentation, to the other Party for such amounts owed in respect of such \*\*\*. The

owing Party will pay any undisputed amounts within [\*\*\*] after receipt of the invoice, and will pay any disputed amounts owed by such Party within [\*\*\*] of resolution of the Dispute.

#### 10.4. Payment Terms.

**10.4.1. Manner of Payment.** All payments to be made between the Parties under this Agreement will be made in Dollars and may be paid by wire transfer in immediately available funds in accordance with the instructions attached hereto as Schedule 10.4.1 (Wire Instructions).

**10.4.2. Reports and Royalty Payments.** Commencing upon the First Commercial Sale of a Product and continuing for as long as the Royalties are due under Section 10.2.4 (Takeda Territory Royalties), Takeda will submit and deliver to Arrowhead within [\*\*\*] after the end of each [\*\*\*] and including the following information for such [\*\*\*]: (i) [\*\*\*]; and (ii) (each, a “**Royalty Report**”). Upon receipt of such Royalty Report, Arrowhead will issue an invoice to Takeda for the amount of the Royalties set forth in such Royalty Report, which invoice will specify the amount of the Royalties that should be made to Arrowhead. Takeda will pay all Royalties set forth in the applicable Royalty Report for such [\*\*\*] set forth in any such invoice within [\*\*\*] after receipt of such invoice.

**10.4.3. Records and Audits.** Takeda will keep books and records in accordance with the applicable Accounting Standards in relation to this Agreement, including in relation to all Operating Profits or Losses, Net Sales, Sublicense Revenue, and Royalties. Takeda will keep such books and records for [\*\*\*] following the Calendar Year to which they pertain. Arrowhead may, upon written request, cause an internationally-recognized independent accounting firm (the “**Auditor**”) that is reasonably acceptable to Takeda to inspect the relevant records of Takeda and its Affiliates to verify the payments made by Takeda and the related reports, statements and books of accounts, as applicable. Before beginning its audit, the Auditor will execute an undertaking acceptable to Takeda by which the Auditor agrees to keep confidential all information reviewed during the audit. Takeda and its Affiliates will make their records available for inspection by the Auditor during regular business hours at such place or places where such records are customarily kept, upon receipt of reasonable advance notice from Arrowhead. The Auditor will review the records solely to verify the accuracy of Takeda’s Operating Profits or Losses, Net Sales, and the Royalties, and compliance with the financial terms of this Agreement. Such inspection right will not be exercised more than [\*\*\*] in any [\*\*\*] and not more frequently than [\*\*\*] with respect to records covering any specific period of time. In addition, Arrowhead will only be entitled to audit the books and records of Takeda from the [\*\*\*] prior to the Calendar Year in which the audit request is made. Arrowhead agrees to hold in strict confidence all information received and all information learned in the course of any audit or inspection, except to the extent necessary to enforce its rights under this Agreement or to the extent required to comply with any law, regulation or judicial order. The Auditor will provide its audit report and basis for any determination to Takeda at the time such report is provided to Arrowhead. In the event that the final result of the inspection reveals an undisputed underpayment or overpayment by Takeda, the underpaid or overpaid amount will be settled promptly. Arrowhead will pay for such inspections, as well as its expenses associated with enforcing its rights with respect to any payments hereunder; *provided, however*, that in the event of an underpayment of more than [\*\*\*] of the total payments

due hereunder for the audited period, then the fees and expenses charged by the Auditor will be paid by Takeda.

**10.4.4. Currency Exchange.** All amounts due to either Party hereunder will be expressed in Dollars. The rate of exchange to be used in computing the amount of currency equivalent in Dollars owed to a Party under this Agreement will be the exchange rate used by such Party in its financial reporting in accordance with its Accounting Standards.

**10.4.5. Taxes.**

- (a) **Indirect Taxes.** Notwithstanding anything to the contrary in this Agreement, Arrowhead will be responsible for any value added, VAT or other similar tax that is imposed with respect to the transactions, payments or the related transfer of rights or other property pursuant to the terms of this Agreement. Takeda shall be entitled to offset any such taxes borne by it from amounts otherwise owed to Arrowhead under this Agreement.
- (b) **Withholding Taxes.** The amounts payable pursuant to this Agreement (“**Payments**”) will not be reduced on account of any Taxes unless required by applicable Law. Takeda will deduct and withhold from the Payments made to Arrowhead any Taxes that it is required by applicable Law to deduct or withhold, (“**Withholding Taxes**”), and any such amounts deducted or withheld by Takeda will be treated as having been paid to Arrowhead for purposes of this Agreement. Any such Withholding Taxes will be an expense of and borne by Arrowhead. If any such Withholding Tax is assessed against, or paid (but in each case not withheld) by Takeda, then Arrowhead will pay the relevant amount of such Withholding Tax to Takeda. In the event that a Governmental Authority retroactively determines that a payment made by Takeda to Arrowhead under this Agreement should have been subject to Withholding Taxes (or to additional Withholding Taxes), and Takeda remits such Withholding Taxes to the Governmental Authority, including any interest and penalties that may be imposed thereon, at the option of Takeda, then Arrowhead will pay the relevant amount of any Withholding Tax (including any interest and penalties thereon) to Takeda. Notwithstanding the foregoing, if Arrowhead is entitled under any applicable tax treaty to a reduction of rate of, or the elimination of, or recovery of, applicable Withholding Tax, then it may deliver to Takeda or the appropriate Governmental Authority the prescribed forms necessary to reduce the applicable rate of withholding or to relieve Takeda of its obligation to withhold tax. If Arrowhead timely delivers to Takeda a validly executed form establishing a reduced rate or exemption from withholding, Takeda shall apply the reduced rate of withholding, or not withhold, as the case may be, *provided* that Takeda is in receipt of evidence, in a form reasonably satisfactory to Takeda, for example Arrowhead’s delivery of all applicable documentation at least two weeks prior to the time that the Payments are due. If, in accordance with the foregoing, Takeda withholds any amount, then it will pay to Arrowhead the balance when due, make timely payment (or cause its agent to make timely payment) to the proper taxing authority of the withheld amount, and send Arrowhead proof of such payment within [\*\*\*] following that payment.

- (c) **Tax Cooperation.** Each Party will provide the other with reasonable assistance to enable the recovery, as permitted by Law, of Withholding Taxes, VAT, or similar obligations resulting from payments made under this Agreement, such recovery to be for the benefit of the Party bearing such Withholding Tax or VAT.
- (d) **No Other Reductions.** Except as provided in this Section 10.4 (Payment Terms) and those deductions expressly included in the definition of Net Sales, the amounts payable hereunder will not be reduced on account of any Taxes, unless required by applicable Law.
- (e) **Tax Exemptions and Credits.** The Parties will reasonably cooperate with each other in seeking any tax exemption or credits that may be available with respect to any Product, including the tax credit available under Section 45C of the Code by reason of a Party's research and Development expenditures contributing to the Product being granted orphan drug status by the FDA, or equivalent Law of any other country.
- (f) **Withholding Reimbursement.** Notwithstanding anything in this Agreement to the contrary, the Parties acknowledge and agree that if either Party redomiciles, or assigns or sublicenses its rights or obligations under this Agreement (including an assignment of this Agreement as permitted under Section 17.1 (Assignment) of this Agreement), and such action leads to the imposition of Withholding Tax liability or VAT on the other Party that would not have been imposed in the absence of such action or in an increase in such liability above the liability that would have been imposed in the absence of such action, then such Party will increase such payment by the amount necessary to ensure that the other Party receives an amount equal to the amount it would have received had no such action occurred.

**10.4.6. Blocked Payments.** In the event that, by reason of applicable Law in any country, it becomes impossible or illegal for a Party to transfer, or have transferred on its behalf, payments owed the other Party hereunder, such Party will promptly notify the other Party of the conditions preventing such transfer and such payments will be deposited in local currency in the relevant country to the credit of the other Party in a recognized banking institution designated by the other Party or, if none is designated by the other Party within a period of [\*\*\*], in a recognized banking institution selected by the transferring Party, as the case may be, and identified in a written notice given to the other Party.

**10.4.7. Interest Due.** Each paying Party will pay the other Party interest on any undisputed payments that are not paid on or before the date such payments are due under this Agreement at the per annum rate of [\*\*\*].

## **11. CONFIDENTIALITY AND PUBLICATION**

### **11.1. Nondisclosure and Non-Use Obligations.**

**11.1.1. Confidential Information.** The existence and terms of this Agreement are the Confidential Information of each Party, and each Party will be deemed a receiving Party

with respect thereto. Unpublished patent applications or Know-How solely owned by a Party are such Party's Confidential Information, and Patent Rights and Know-How jointly owned by the Parties will be deemed both Parties' Confidential Information, in each case, regardless of which Party is the Disclosing Party. All information exchanged between the Parties regarding the Prosecution and Maintenance, defense, and enforcement of the Patent Rights under Article 14 (Intellectual Property) will be the Confidential Information of the prosecuting Party. The Arrowhead Know-How will be the Confidential Information of Arrowhead. All data, results, and reports relating to any Product (a) generated by Takeda under this Agreement will be the Confidential Information of Takeda and (b) generated by Arrowhead under this Agreement will be the Confidential Information of Arrowhead; *provided* that Arrowhead will maintain such data, results, and reports described in the foregoing clause (b) and all Arrowhead Know-How in confidence and not disclose them to any Third Party for so long as they remain Confidential Information of Arrowhead, except as permitted under Section 11.1.2 (Permitted Disclosures), Section 11.2 (Publication and Publicity), or Section 14.2.1(b) (Arrowhead's Right). All information disclosed by a Party pursuant to that certain Confidentiality Agreement between the Parties dated June 3, 2020 is deemed the Confidential Information of such Party pursuant to this Agreement. During the Term, the receiving Party will use at least the same degree of care to protect the secrecy of the Confidential Information of the Disclosing Party that it uses to prevent the disclosure of its own other confidential information of similar importance and in any event no less than a reasonable duty of care.

**11.1.2. Non-Disclosure and Non-Use.** Except as otherwise expressly set forth herein, the Receiving Party will, during the Term and for a period of [\*\*\*] thereafter, keep the Confidential Information of the Disclosing Party confidential using at least the same degree of care with which the Receiving Party holds its own Confidential Information (but in no event less than a reasonable degree of care) and will not (a) disclose such Confidential Information to any Person without the prior written approval of the Disclosing Party, except, solely to the extent necessary to exercise its rights or perform its obligations under this Agreement, to its employees, Affiliates, Sublicensees, and Subcontractors, consultants, or agents who have a need to know such Confidential Information, all of whom will be similarly bound by confidentiality, non-disclosure, and non-use provisions at least as restrictive or protective of the Parties as those set forth in this Agreement and for whom the Disclosing Party will be responsible, or (b) use such Confidential Information for any purpose other than for the purposes contemplated by this Agreement. The Receiving Party will use diligent efforts to cause the foregoing Persons to comply with the restrictions on use and disclosure set forth in this Section 11.1.2 (Non-Disclosure and Non-Use) and will be responsible for ensuring that such Persons maintain the Disclosing Party's Confidential Information in accordance with this Article 11 (Confidentiality). Each Party will promptly notify the other Party of any misuse or unauthorized disclosure of the other Party's Confidential Information.

**11.1.3. Permitted Disclosures.** Notwithstanding the obligations of confidentiality and non-use set forth above, (a) Takeda may disclose Confidential Information of Arrowhead for Takeda's or its Affiliates' internal research and Development of Products under this Agreement, and (b) Takeda may publicly discuss and disclose Confidential Information of Arrowhead related to the Current Phase II/III Trial or New Clinical Trial, as applicable, to articulate its rationale for such trial in the context of the transactions contemplated by this

Agreement. In addition, a Receiving Party may provide Confidential Information disclosed to it, and disclose the existence and terms of this Agreement to:

- (a) (i) the Prosecution and Maintenance of Arrowhead Patent Rights or Program Patent Rights, in each case, as contemplated by this Agreement; or (ii) Regulatory Submissions and other filings with Governmental Authorities (including Regulatory Authorities), as necessary for the Exploitation of a Product;
- (b) disclosure of the existence and applicable terms of this Agreement, the status and results of Exploitation of one or more Products to actual or *bona fide* potential investors, acquirors, Sublicensees, lenders, and other financial or commercial partners (including in connection with any royalty factoring transaction), and their respective attorneys, accountants, banks, investors, and advisors, solely for the purpose of evaluating or carrying out an actual or potential investment, acquisition, sublicense, debt transaction, or collaboration; *provided* that, in each such case, (i) such Persons are bound by obligations of confidentiality, non-disclosure, and non-use provisions at least as restrictive or protective of the Parties as those set forth in this Agreement or otherwise customary for such type and scope of disclosure, (ii) that any such disclosure is limited to the maximum extent practicable for the particular context in which it is being disclosed, and (iii) that the term of such confidentiality obligation must be consistent with industry standards, but in all cases at least one year;
- (c) if required by law, rule or governmental regulation, including as may be required in connection with any filings made with, or by the disclosure policies of a major stock exchange (as set forth in additional detail in Section 11.1.4 (Confidential Treatment)); *provided* that the Party seeking to disclose the Confidential Information of the other Party: (i) uses reasonable efforts to inform the other Party prior to making any such disclosures and reasonably cooperates with the other Party in seeking a protective order or other appropriate remedy (including redaction); and (ii) whenever possible, requests confidential treatment of such information;
- (d) to prosecute or defend litigation so long as there is [\*\*\*] prior written notice given by the Receiving Party before filing, and to enforce Patent Rights in connection with the Receiving Party's rights and obligations pursuant to this Agreement; and
- (e) to allow the Receiving Party to exercise its rights and perform its obligations hereunder, *provided* that such disclosure is covered by terms of confidentiality and non-use at least as restrictive as those set forth herein.

If and whenever any Confidential Information is disclosed in accordance with this Section 11.1.3 (Permitted Disclosures), such disclosure will not cause any such information to cease to be Confidential Information except to the extent that such disclosure results in a public disclosure of such information (other than by breach of this Agreement).

#### 11.1.4. Confidential Treatment.

- (a) Notwithstanding any provision to the contrary set forth in this Agreement, if a Party is required to make a disclosure of the other Party's Confidential Information pursuant to Section 11.1.3 (Permitted Disclosure), then it will, to the extent not prohibited by applicable Law or judicial or administrative process, give reasonable advance notice to the other Party of such proposed disclosure and use reasonable efforts to secure confidential treatment of such information and will only disclose that portion of Confidential Information that is legally required to be disclosed as advised by its legal counsel. In any event, each Party agrees to take reasonable action to avoid any disclosure of Confidential Information of the other Party hereunder.
- (b) In addition, the Parties acknowledge that either or both Parties may be obligated to file a copy of this Agreement (or portions of this Agreement or an abstract of the terms of this Agreement) with the SEC or other Governmental Authorities. Each Party will be entitled to make such a required filing, *provided* that it initially files a redacted copy of this Agreement (or portions of this Agreement or an abstract of the terms of this Agreement) reviewed by each Party ("**Redacted Agreement**") and requests confidential treatment of the terms redacted from this Agreement for a reasonable period of time, in each case, pursuant to the following procedure. In the event of any such filing, each Party will (i) permit the other Party to review and comment upon a Redacted Agreement at least [\*\*\*] in advance of its submission to the SEC or such other Governmental Authorities, (ii) cooperate in good faith with and reasonably consider and incorporate the other Party's reasonable comments thereon to seek confidential treatment of the terms and conditions of this Agreement that such other Party requests to be kept confidential or otherwise afforded confidential treatment, to the extent consistent with the then-current legal requirements governing redaction of information from material agreements (as determined based on the advice of such Party's outside counsel) that must be publicly filed in the applicable country, (iii) only disclose Confidential Information that counsel reasonably advises is legally required to be disclosed, (iv) promptly advise the other Party of any other substantive communications between it or its representatives with such Governmental Authority with respect to such confidential treatment request, (v) upon the written request of the other Party, request an appropriate extension of the term of the confidential treatment period upon the expiration thereof, where available, and (vi) if such Governmental Authority requests any changes to the redactions set forth in the Redacted Agreement, use Commercially Reasonable Efforts to support the redactions in the Redacted Agreement as originally filed (to the extent consistent with the then-current legal requirements governing redaction of information from material agreements that must be publicly filed) and, to the extent reasonably practicable, not agree to any changes to the redactions proposed in the Redacted Agreement without first discussing such changes with the other Party and taking the other Party's comments into consideration when deciding whether to agree to such changes. Each Party will be responsible for its own legal and other external costs in connection with any such filing, registration, or notification.

## 11.2. Publication and Publicity.

**11.2.1. Publication.** Except for disclosures permitted in accordance with Section 11.1.3 (Permitted Disclosures), Takeda will have the right to review and approve any publication or public presentation relating to any Product that Arrowhead or its Affiliates wishes to issue, and, in any event, either Party wishing to make a publication or public presentation that contains the Confidential Information of the other Party or any Arrowhead Know-How will deliver to the other Party and the JSC a copy of the proposed written publication or presentation at least [\*\*\*] prior to submission for publication or presentation. The reviewing Party, through the JSC, will have the right to (a) propose modifications to the publication or presentation for patent reasons or trade secret reasons or to remove Confidential Information of the reviewing Party or its Affiliates, and the publishing Party will remove all Confidential Information of the reviewing Party if requested by the reviewing Party and otherwise use good faith efforts to reflect such Party's reasonable comments, or (b) request a reasonable delay in publication or presentation in order to protect patentable information. If the reviewing Party requests a delay to enable the reviewing Party to file patent applications as permitted under Article 14 (Intellectual Property) protecting such Party's right in such information, then the publishing Party will delay such submission or presentation for a period of [\*\*\*] (or such shorter period as may be agreed by the Parties). With respect to any proposed publications or disclosures by investigators or academic or non-profit collaborators, such materials will be subject to review under this Section 11.2 (Publication and Publicity) to the extent that Arrowhead or Takeda, as the case may be, has the right and ability to do so (after using reasonable efforts to obtain such right and ability). Notwithstanding any provision to the contrary set forth in this Agreement, and subject to Arrowhead's right to review publications set forth in this Section 11.2.1 (Publication), Takeda may, in its sole discretion, publish results of all Clinical Trials and other Development activities conducted with respect to a Product, and Arrowhead will have no such right to publish on such matters unless approved in advance, in writing, by Takeda. All publications relating to any Product will be prepared, presented, and published in accordance with pharmaceutical industry accepted guidelines including: (i) International Committee of Medical Journal Editors (ICMJE) guidelines, (ii) Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication, (iii) Pharmaceutical Research and Manufacturers of America (PhRMA) guidelines, and (iv) Principles on Conduct of Clinical Trials.

**11.2.2. Publicity.** Except as set forth in Section 11.1 (Nondisclosure and Non-Use Obligations) or Section 11.2 (Publication and Publicity), the terms of this Agreement may not be disclosed by either Party. Neither Party will use the name, Trademark, trade name or logo of the other Party or its employees in any publicity, news release or disclosure relating to this Agreement, its subject matter, or the activities of the Parties hereunder, in each case, without the prior express written permission of the other Party, except (a) as may be required by applicable Law (as determined based on the advice of outside counsel), including by the rules or regulations of the SEC or similar regulatory agency in any country other than the United States or of any stock exchange or listing entity, *provided* that the Party making such disclosure or use of the name, Trademark, trade name, or logo of the other Party or its employees gives the other Party reasonable prior written notice of such



disclosure and otherwise complies with Section 11.1.3 (Permitted Disclosures), or (b) as expressly permitted by the terms hereof.

**11.2.3. Press Release.** The Parties have agreed on the contents of an initial joint press release, in substantially the form attached hereto as Schedule 11.2.3 (Joint Press Release) or as otherwise agreed by the Parties, and which will be issued by the Parties promptly after the Effective Date. Following such initial press release, except as provided in Section 11.2.2 (Publicity) or this Section 11.2.3 (Press Release), neither Party will issue any press release or public announcement relating to this Agreement without the prior written approval of the other Party (such approval not to be unreasonably withheld, conditioned or delayed), except that a Party may (a) once a press release or other public statement is approved in writing by both Parties, make subsequent public disclosure of the information contained in such press release or other written statement without the further approval of the other Party (so long as such information remains true and correct), and (b) issue a press release or public announcement as required by applicable Law (including a press release corresponding to any securities disclosure, such as pursuant to a Form 8-K, or any earnings or financial press release), including by the rules or regulations of the SEC or similar regulatory agency in a country other than the United States or of any stock exchange or listing entity, *provided* that the Party issuing such press release gives reasonable prior notice to the other Party of and the opportunity to comment on the press release or public announcement, and otherwise complies with this Article 11 (Confidentiality and Publication).

## 12. REPRESENTATIONS, WARRANTIES AND COVENANTS

**12.1. Mutual Representations and Warranties as of the Execution Date.** Each Party represents and warrants to the other Party, as of the Execution Date, that:

- 12.1.1.** such Party is a corporation duly organized, validly existing, and in good standing under the Laws of its jurisdiction of incorporation or formation;
- 12.1.2.** such Party has all requisite corporate power and corporate authority to enter into this Agreement and to carry out its obligations under this Agreement;
- 12.1.3.** all requisite corporate action on the part of such Party, its directors and stockholders required by applicable Law for the authorization, execution, and delivery by such Party of this Agreement, and the performance of all obligations of such Party under this Agreement, has been taken;
- 12.1.4.** the execution, delivery, and performance of this Agreement, and compliance with the provisions of this Agreement, by such Party do not and will not: (a) violate any provision of applicable Law or any ruling, writ, injunction, order, permit, judgment, or decree of any Governmental Authority, (b) constitute a breach of, or default under (or an event that, with notice or lapse of time or both, would become a default under) or conflict with, or give rise to any right of termination, cancellation or acceleration of, any agreement, arrangement or instrument, whether written or oral, by which such Party or any of its assets are bound, or (c) violate or conflict with any of the provisions of such Party's organizational documents

(including any articles or memoranda of organization or association, charter, bylaws, or similar documents); and

- 12.1.5. such Party has not entered into any agreement with any Third Party that is in conflict with the rights granted to the other Party under this Agreement, and has not taken any action that would prevent it from granting the rights granted to the other Party under this Agreement, or that would otherwise conflict with or adversely affect the other Party's rights under this Agreement.
- 12.1.6. no consent, approval, authorization, or other order of, or filing with, or notice to, any Governmental Authority or other Third Party is required to be obtained or made by such Party in connection with the authorization, execution, and delivery by such Party of this Agreement, except as required pursuant to the HSR Act and any other applicable Antitrust Laws.

**12.2. Representations and Warranties by Arrowhead.** Arrowhead represents and warrants to Takeda, as of the Execution Date that:

- 12.2.1. **Arrowhead Patent Rights.** Schedule 12.2.1(a) (Arrowhead AAT-Specific Patent Rights) and Schedule 12.2.1(b) (Arrowhead Platform Patent Rights) together set forth a complete and accurate list of all Arrowhead Patent Rights issued or pending as of the Execution Date, and neither Arrowhead nor any of its Affiliates holds rights to any Patent Rights that are necessary or reasonably useful to Exploit a Compound or a Product in the Field in the Territory that it does not Control.
- 12.2.2. **Arrowhead Technology.** Arrowhead has (a) legal or beneficial title and sole ownership of all Arrowhead Technology, free and clear of all mortgages, pledges, liens, encumbrances or claims of any kind, including claims by any Governmental Authority or academic or non-profit institution; and (b) authority to grant to Takeda and its Affiliates the licenses set forth in this Agreement under the Arrowhead Technology. Arrowhead is not a party to any agreement with a Third Party under which Arrowhead has obligations to such Third Party that conflict with (i) the licenses granted hereunder to Takeda under any Arrowhead Technology or (ii) Takeda's practice thereunder or Exploitation of Products.
- 12.2.3. **Control.** Arrowhead or its Affiliates Controls all Patent Rights and Know-How owned, invented or licensed by Arrowhead as of the Execution Date that are necessary or actually used as of the Execution Date to Exploit Products.
- 12.2.4. **Ownership of Arrowhead Technology.** With respect to all Arrowhead Technology, (a) Arrowhead and its Affiliates have obtained from all employees and independent contractors who participated in the invention or authorship thereof, assignments of all ownership rights of such employees and independent contractors in such Arrowhead Technology, either pursuant to written agreement or by operation of Law; (b) all of its employees, officers, contractors, and consultants have executed agreements or have existing obligations under applicable Law requiring assignment to Arrowhead or its Affiliate, as applicable, of all rights, title, and interests in and to their inventions made during the course of and as the result of this Agreement; (c) no officer or employee of Arrowhead or its Affiliate is subject to any agreement with any other Third Party that

requires such officer or employee to assign any interest in any Arrowhead Technology to any Third Party, and (d) Arrowhead exclusively owns all rights, title, and interests in and to the Arrowhead Patent Rights. The Arrowhead Patent Rights are being diligently prosecuted in the respective patent offices in accordance with applicable Law and Arrowhead and its Affiliates have presented all references, documents, or information for which it and the inventors had a duty to disclose under the applicable Law, including 37 C.F.R. 1.56 or its foreign equivalent, to the relevant patent examiners at the relevant patent offices for each Arrowhead Patent Right.

- 12.2.5. Validity and Enforceability.** With respect to Arrowhead Patent Rights, there are no oppositions, nullity actions, interferences, *inter partes* reexaminations, *inter partes* reviews, post-grant reviews, derivation proceedings, or other proceedings pending or, to Arrowhead's knowledge, threatened in writing (but excluding office actions or similar communications issued by the United States Patent and Trademark Office or any analogous foreign Governmental Authority (collectively, "**Patent Offices**") in the ordinary course of Prosecution and Maintenance of any patent application) that challenge the ownership, scope, duration, validity, enforceability, priority, or right to use the Arrowhead Patent Rights owned or purported to be owned by Arrowhead. Arrowhead does not have knowledge of any fact or circumstance that would cause Arrowhead to reasonably conclude that any of the Arrowhead Patent Rights is, or will be upon issuance, invalid or unenforceable.
- 12.2.6. Inventorship.** To Arrowhead's knowledge, inventorship of each Arrowhead Patent Right is properly identified on each patent and patent application. Arrowhead has no knowledge of any disputes with respect to inventorship of any Arrowhead Patent Rights.
- 12.2.7. Good Standing.** All official fees, maintenance fees and annuities for any pending or issued Arrowhead Patent Rights have been paid when due, and all administrative procedures with Governmental Authorities have been completed for such Arrowhead Patent Rights such that such Patent Rights are subsisting and in good standing.
- 12.2.8. Duty of Disclosure.** To Arrowhead's knowledge, all Arrowhead Patent Rights have been duly and properly filed and maintained and the inventors thereof and parties prosecuting such applications have complied in all material respects with their duty of candor and disclosure to the U.S. Patent and Trademark Office and other foreign patent offices in connection with such applications.
- 12.2.9. Disclosure to Takeda.** To Arrowhead's knowledge, Arrowhead has disclosed to Takeda (a) all information that is (i) known to any individual associated with the filing or prosecution (as defined in 37 C.F.R. § 1.56(c)) of the Arrowhead Patent Rights and (ii) material to patentability of the Arrowhead Patent Rights (as defined in 37 C.F.R. § 1.56(b)), or that would be considered material to patentability as defined in 37 C.F.R. § 1.56(b) but for an exception under 35 U.S.C. § 102(b), and (b) an indication to which Arrowhead Patent Rights each piece of such information relates.
- 12.2.10. Prior Art.** To Arrowhead's knowledge, there is not any reference or prior art that would anticipate the issuance of any claim as pending as of the Execution Date in any Arrowhead Patent Rights.

- 12.2.11. Government Funding.** No government funding, facilities of a university, college, or other educational institution or research center was used in the development of any Arrowhead Patent Rights. No Person who was involved in, or who contributed to, the creation or development of any Arrowhead Patent Rights has, performed services for the government, university, college, or other educational institution or research center in a manner that would affect Arrowhead's rights in the Arrowhead Patent Rights.
- 12.2.12. No Claims.** There are (a) no claims, judgments or settlements against or owed by Arrowhead or its Affiliates and (b) no pending or, to Arrowhead's knowledge, threatened claims or litigation, in each case ((a) and (b)), related to the Arrowhead Technology or the Compounds.
- 12.2.13. Notice of Infringement or Misappropriation.** Neither Arrowhead nor its Affiliates have received any written notice or threat in writing from any Third Party asserting or alleging that any Development or Manufacture of the Compounds by Arrowhead or its Affiliates prior to the Execution Date infringed, misappropriated, or otherwise violated any intellectual property rights of such Third Party. The conception, development, and reduction to practice of any of the Arrowhead Technology have not constituted or involved the misappropriation of trade secrets or other rights or property of any Third Party.
- 12.2.14. Third Party Technology.** The Development, Manufacture and Commercialization of Compounds and Products in the form such Compounds and Products exist as of the Effective Date does not and will not misappropriate any intellectual property of any Third Party. To Arrowhead's knowledge, Arrowhead has disclosed to Takeda all Patent Rights of Third Parties that Cover or are related to ARO-AAT.
- 12.2.15. Third Party Infringement.** To Arrowhead's knowledge, no Third Party is infringing, misappropriating, or otherwise violating, or threatening to infringe, misappropriate, or otherwise violate the Arrowhead Technology.
- 12.2.16. Confidentiality of Trade Secrets.** Arrowhead and its Affiliates have taken commercially reasonable measures to protect the secrecy, confidentiality, and value of all Arrowhead Know-How that constitutes trade secrets under applicable Law (including requiring all employees, consultants, and independent contractors to execute binding and enforceable agreements requiring all such employees, consultants, and independent contractors to maintain the confidentiality of such Arrowhead Know-How) and such Arrowhead Know-How has not been used, disclosed to, or discovered by any Third Party except pursuant to such confidentiality agreements and there has not been a breach by any party to such confidentiality agreements.
- 12.2.17. Third Party Agreements.** There are no Third Party agreements pursuant to which Arrowhead Controls any of the Arrowhead Technology and no Third Party has any rights, title, or interests in or to, or any license under, any of the Arrowhead AAT-Specific Technology.
- 12.2.18. Compliance with Laws.** Arrowhead and its Affiliates have conducted, and to Arrowhead's knowledge their respective contractors and consultants have conducted prior to the Effective Date, the Exploitation of the Compounds in compliance with all applicable

Laws, including as applicable GLP, GCP, and cGMP and any applicable anti-corruption or anti-bribery laws or regulations of any Governmental Authority with jurisdiction over such Exploitation. Arrowhead and its Affiliates did not use in any capacity in connection with the Exploitation of any Compound any Person that had been debarred pursuant to Section 306 of the FD&C Act, as amended, or that was the subject of a conviction described in such section.

**12.2.19. Regulatory Submissions and Study Reports.** Arrowhead or its Affiliates Control all Regulatory Submissions in the Territory related to the Compounds, and to Arrowhead's knowledge, Arrowhead or its Affiliates Control all study reports and underlying data from the Ongoing Development Activities or any other Clinical Trials of any Compound conducted before the Effective Date.

**12.2.20. No Fraudulent Statements.** Neither Arrowhead nor its Affiliates, nor, to Arrowhead's knowledge, any of its or their respective directors, officers, employees or agents has (a) committed an act, (b) made a statement or (c) failed to act or make statement, in any case ((a), (b) or (c)), that (i) would be or create an untrue statement of material fact or fraudulent statement to the FDA or any other Regulatory Authority with respect to the Development and Manufacture of any Compound or Product or (y) could reasonably be expected to provide a basis for the FDA or any other Regulatory Authority to invoke its policy respecting "Fraud, Untrue Statements of Material Facts, Bribery and Illegal Gratuities", set forth in 56 Fed. Reg. 46191 (September 10, 1991) and any amendments thereto or any analogous laws or policies, with respect to the Development and Manufacture of any Compound or Product.

**12.2.21. Disclosure.** As of the Execution Date of this Agreement, Arrowhead has provided Takeda with the opportunity to review all written material data in Arrowhead's possession relating to the subject matter of this Agreement, and has not intentionally concealed from Takeda any such material data. Arrowhead has not intentionally withheld any material information related to the Arrowhead Technology, Compounds, or Products, in each case, that was requested by Takeda in writing.

**12.3. Warranty Disclaimer.** EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION OR EXTENDS ANY WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, TO THE OTHER PARTY WITH RESPECT TO ANY PATENTS, KNOW-HOW, MATERIALS, COMPOUND, PRODUCT, GOODS, SERVICES, RIGHTS OR OTHER SUBJECT MATTER OF THIS AGREEMENT AND HEREBY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NONINFRINGEMENT WITH RESPECT TO ANY AND ALL OF THE FOREGOING. EACH PARTY HEREBY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE EXPLOITATION OF ANY COMPOUND OR PRODUCT PURSUANT TO THIS AGREEMENT WILL BE SUCCESSFUL.

**12.4. Certain Covenants.**

**12.4.1. Compliance.** Each Party, its Affiliates, and Sublicensees will conduct the Exploitation of the Products in a good scientific manner [\*\*\*] in accordance with all applicable Laws,

including, as applicable, GLP, GCP, and cGMP or regulations of any Governmental Authority with jurisdiction over the activities performed by or on behalf of Takeda or its Affiliates or Sublicensees in furtherance of such obligations. In addition, if a Party is or becomes subject to a legal obligation to a Governmental Authority (such as a corporate integrity agreement or settlement agreement with a Governmental Authority), then the other Party will perform such activities as may be reasonably requested by the obligated Party to enable such Party to comply with its legal obligation to such Governmental Authority with respect to the Products.

- 12.4.2. No Debarment.** Neither Party will use or permit its Affiliates or Sublicensees to use, in any capacity in connection with the performance of its obligations under this Agreement, any Person that has been debarred pursuant to Section 306 of the FD&C Act, as amended, or that is the subject of a conviction described in such section. Each Party agrees to inform the other Party in writing immediately if it or any Person that is performing activities under this Agreement is debarred or is subject to debarment or is the subject of a conviction described in Section 306 of the FD&C Act, or if any action, suit, claim, investigation, or legal or administrative proceeding (a) has been filed and is pending or (b) is threatened in writing relating to the debarment or conviction of such notifying Party or, to such Party's knowledge, any Person or entity used in any capacity by such Party or any of its Affiliates with respect to this Agreement or the performance of its other obligations under this Agreement. Such notifying Party will use commercially reasonable efforts to include in any agreement with any Person or entity used in any capacity by such Party or any of its Affiliates with respect to this Agreement or the performance of its other obligations under this Agreement an obligation to provide notice to Arrowhead of the matters described in this Section 12.4.2 (No Debarment).
- 12.4.3. Control.** Arrowhead or its Affiliates will retain Control during the Term of all Patent Rights and Know-How owned by Arrowhead or its Affiliates as of the Effective Date that are (a) necessary to Exploit any Products (excluding any active pharmaceutical ingredient therein that is not a Compound) in the Field in the Territory or (b) reasonably useful to Exploit one or more Products in the Field in the Territory.
- 12.4.4. No Conflicts.** Arrowhead will not enter into any agreement with any Third Party that is in conflict with the rights granted to Takeda under this Agreement and will not take any action that would prevent it from granting the rights granted to Takeda under this Agreement or that would otherwise materially conflict with or adversely affect the rights granted to Takeda under this Agreement.
- 12.4.5. Assignment.** Upon Takeda's request, Arrowhead or its Affiliates will use reasonable efforts to obtain from each employee and independent contractor who participated in the invention or authorship of any Arrowhead Technology, assignments of all ownership rights of such employees and independent contractors in such Arrowhead Technology pursuant to written agreement.

### **13. INDEMNIFICATION; LIMITATION OF LIABILITY; INSURANCE**

- 13.1. Indemnification by Arrowhead.** Arrowhead will indemnify, hold harmless, and defend Takeda, its Affiliates, and their respective directors, officers, employees, and agents ("**Takeda**

**Indemnitees**) from and against any and all losses, liabilities, damages, costs, taxes (including penalties and interest) fees, and expenses (including reasonable attorneys' fees and litigation expenses) (collectively, "**Losses**") resulting from any claims, suits, proceedings or causes of action brought by a Third Party (collectively, "**Claims**") against such Takeda Indemnitees to the extent arising out of or resulting from:

- 13.1.1. any breach of, or inaccuracy in, any representation or warranty made by Arrowhead in this Agreement, or any breach or violation of any covenant or agreement of Arrowhead in this Agreement,
- 13.1.2. the gross negligence or willful misconduct by or of Arrowhead or any of its Affiliates, or any of their respective directors, officers, employees, or agents in the performance of Arrowhead's obligations or exercise of its rights under this Agreement, or
- 13.1.3. the Exploitation of any Product, in each case, by or on behalf of Arrowhead or any of its Affiliates, or the conduct of the Ongoing Development Activities.

Notwithstanding the foregoing, Arrowhead will have no obligation to indemnify the Takeda Indemnitees to the extent that the Losses arise out of or result from matters described under Section 13.2.1 or 13.2.2 (Indemnification by Takeda).

**13.2. Indemnification by Takeda.** Takeda will indemnify, hold harmless, and defend Arrowhead, its Affiliates and licensees and their respective directors, officers, employees, and agents ("**Arrowhead Indemnitees**") from and against any and all Losses resulting from any Claims against such Arrowhead Indemnitees to the extent arising out of or resulting from:

- 13.2.1. any breach of, or inaccuracy in, any representation or warranty made by Takeda in this Agreement, or any breach or violation of any covenant or agreement of Takeda in this Agreement,
- 13.2.2. the gross negligence or willful misconduct by or of Takeda or any of its Affiliates or Sublicensees, or any of their respective directors, officers, employees, or agents in the performance of Takeda's obligations or exercise of its rights under this Agreement, or
- 13.2.3. the Exploitation of any Product by or on behalf of Takeda or any of its Affiliates or Sublicensees, including the infringement of any Third Party Patent Right in the course of such Exploitation, but excluding the Exploitation of any Product in the Profit-Share Territory.

Notwithstanding the foregoing, Takeda will have no obligation to indemnify the Arrowhead Indemnitees to the extent that the Losses arise out of or result from matters described under Section 13.1.1 or 13.1.2 (Indemnification by Arrowhead).

**13.3. Third Party Losses for Products.** Any Losses arising out of Claims arising from the Exploitation of any Product in the Profit-Share Territory will initially be borne by Takeda, other than Losses arising out of (a) any breach of, or inaccuracy in, any representation or warranty made by a Party in this Agreement, or any breach or violation of any covenant or agreement of a Party in this Agreement, or (b) the gross negligence or willful misconduct by or of a Party or any of its respective

Affiliates or (in the case of Takeda) Sublicensees or any of their respective directors, officers, employees, or agents in the performance of such Party's obligations or exercise of its rights under this Agreement, provided that, with respect to all such Losses other than those arising out of the foregoing clauses (a) or (b), Arrowhead will reimburse its [\*\*\*] share of such Losses within [\*\*\*] after receipt of invoice therefor from Takeda. Each Party will notify the other Party in writing promptly upon being notified of or having knowledge of any claim by a Third Party arising from the Exploitation of any Product. Takeda will defend the Arrowhead Indemnitees from any Claims described in this Section 13.3 (Third Party Losses for Products) pursuant to Section 13.4 (Indemnification Procedure).

#### 13.4. Indemnification Procedure.

**13.4.1. Notice.** The Party entitled to indemnification under this Article 13 (Indemnification; Limitation of Liability; Insurance) (an "**Indemnified Party**") will notify the Party responsible for such indemnification (the "**Indemnifying Party**") in writing promptly upon being notified of or having knowledge of any claim or claims asserted or threatened against the Indemnified Party that could give rise to a right of indemnification under this Agreement; *provided* that the failure to give such notice will not relieve the Indemnifying Party of its indemnity obligation hereunder except to the extent that such failure materially prejudices the Indemnifying Party.

**13.4.2. Indemnifying Party's Right to Defend.** The Indemnifying Party will have the right to defend, at its sole cost and expense, any such claim by all appropriate proceedings; *provided* that the Indemnifying Party may not enter into any compromise or settlement unless (a) such compromise or settlement imposes only a monetary obligation on the Indemnifying Party and which includes as an unconditional term thereof the giving by each claimant or plaintiff of the Indemnified Party a release from all liability in respect of such claim; or (b) the Indemnified Party consents to such compromise or settlement, which consent will not be unreasonably withheld, conditioned or delayed unless such compromise or settlement involves (i) any admission of legal wrongdoing by the Indemnified Party, (ii) any payment by the Indemnified Party that is not indemnified under this Agreement, or (iii) the imposition of any equitable relief against the Indemnified Party (in which case, (i) through (iii), the Indemnified Party may withhold its consent to such settlement in its sole discretion).

**13.4.3. Indemnified Party's Right to Defend.** If the Indemnifying Party does not elect to assume control of the defense of a claim, then the Indemnified Party will have the right, at the expense of the Indemnifying Party, upon at least [\*\*\*] prior written notice to the Indemnifying Party of its intent to do so, to undertake the defense of such claim for the account of the Indemnifying Party (with counsel reasonably selected by the Indemnified Party); *provided* that the Indemnified Party will keep the Indemnifying Party apprised of all material developments with respect to such claim. The Indemnified Party may not enter into any compromise or settlement without the prior written consent of the Indemnifying Party, such consent not to be unreasonably withheld.

**13.4.4. Cooperation.** The Indemnified Party will cooperate with the Indemnifying Party and may participate in, but not control, any defense or settlement of any claim controlled by the Indemnifying Party pursuant to this Section 13.4 (Indemnification Procedure) and will bear



its own costs and expenses with respect to such participation; *provided* that the Indemnifying Party will bear such costs and expenses if counsel for the Indemnifying Party reasonably determines that such counsel may not properly represent both the Indemnifying Party and the Indemnified Party.

**13.5. Limitation of Liability.** NEITHER PARTY WILL BE LIABLE FOR SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES ARISING OUT OF THIS AGREEMENT, OR THE EXERCISE OF ITS RIGHTS OR THE PERFORMANCE OF ITS OBLIGATIONS HEREUNDER, OR ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT, INCLUDING LOST PROFITS (OTHER THAN, TO THE EXTENT THAT THE PARTIES ARE SHARING PROFITS, IN THE FORM OF DIRECT DAMAGES), REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES, EXCEPT FOR DAMAGES THAT ARISE AS A RESULT OF (A) A PARTY'S GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, (B) A BREACH OF ARTICLE 11 (CONFIDENTIALITY AND PUBLICATION), OR (C) INFRINGEMENT, MISAPPROPRIATION, OR OTHER VIOLATION OF ANY ARROWHEAD TECHNOLOGY OR TAKEDA PORTFOLIO IP (AS APPLICABLE). NOTHING IN THIS SECTION 13.5 (LIMITATION OF LIABILITY) IS INTENDED TO LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER THIS AGREEMENT.

**13.6. Insurance.** Each Party will maintain during the Term and for [\*\*\*] thereafter, at its own expense, insurance or self-insurance, as reasonably necessary to cover its own product liability and its obligations under this Agreement. Upon request, each Party will provide the other Party with evidence of the existence and maintenance of such insurance coverage. Each Party will notify the other Party [\*\*\*] in advance of cancellation of any such insurance.

## **14. INTELLECTUAL PROPERTY**

### **14.1. Inventions.**

**14.1.1. Inventorship.** Ownership of Program Know-How and Program Patent Rights will be determined in accordance with United States patent Laws for determining inventorship. The Parties will jointly own any and all Joint Program Technology. Subject to the licenses granted to the other Party under this Agreement, each Party will be entitled to practice, license, assign, and otherwise practice under the Joint Program Technology without the duty of accounting or seeking consent from the other Party, and where consent is required, such consent is hereby given. Each Party, for itself and on behalf of its Affiliates, hereby assigns and agrees to assign, to the other Party an equal and undivided joint ownership interest in and to all Joint Program Technology, to be held in accordance with this Section 14.1.1 (Inventorship).

**14.1.2. Disclosure.** Each Party will promptly disclose to the other Party all invention disclosures or other similar documents relating to Program Know-How developed or invented by or on behalf of such Party hereunder during the Term, (a) in the case of Arrowhead as the disclosing Party, for all Program Know-How that is necessary or reasonably useful to Exploit the Compounds and Products in the Field in the Territory and (b) in the case of Takeda as the disclosing Party, only for Program Know-How that Arrowhead requires to perform its obligations under this Agreement, and, in each case, all invention disclosures

or other similar documents submitted to such Party by its or its Affiliates' employees, agents or independent contractors relating to such Program Know-How, and shall also respond promptly to reasonable requests from the other Party for additional information relating to such disclosures, documents or applications.

**14.1.3. Personnel Obligations.** Each employee, agent, or independent contractor of a Party or its respective Affiliates performing work under this Agreement will, prior to commencing such work, be bound by written invention assignment obligations, including: (a) promptly reporting any invention, discovery, or other intellectual property right; (b) presently assigning to the applicable Party or Affiliate all of his or her right, title, and interest in and to any invention, discovery, or other intellectual property; (c) cooperating in the preparation, filing, prosecution, maintenance and enforcement of any patent and patent application; and (d) performing all acts and signing, executing, acknowledging, and delivering any and all documents required for effecting the obligations and purposes of this Agreement. It is understood and agreed that such invention assignment agreement need not reference or be specific to this Agreement. Each Party will be solely responsible for any payments to inventors with an obligation to assign, or who do assign, their rights, title, and interests in and to any Program Know-How and Program Patent Rights to such Party. Arrowhead will be solely responsible for payments to inventors of any other Arrowhead Patent Rights.

**14.1.4. Joint Research Agreement.** This Agreement is a joint research agreement within the meaning of pre-AIA 35 U.S.C. § 103(c) and AIA 35 U.S.C. § 102(c).

**14.2. Prosecution and Maintenance of Patent Rights.** The Parties will conduct the Prosecution and Maintenance of the applicable Patent Rights in accordance with this Section 14.2 (Prosecution and Maintenance of Patent Rights).

**14.2.1. Right to Prosecute Patent Rights.**

(a) **Takeda's Right.**

(i) Beginning on the Effective Date, as between the Parties, Takeda will have (i) the first right (but not the obligation) to Prosecute and Maintain all Arrowhead AAT-Specific Patent Rights and Joint Program Patent Rights in the Territory and (ii) the sole right (but not the obligation) to Prosecute and Maintain the Takeda Program Patent Rights (such Patent Rights in clauses (i) and (ii), collectively, the "**Takeda Prosecuted Patent Rights**"), using outside patent counsel of its choice. The Parties will share the applicable Patent Costs incurred by Takeda for the Prosecution and Maintenance of the Takeda Prosecuted Patent Rights in the Profit-Share Territory in accordance with Section 10.2.1 (Profit and Loss Share), and Takeda will bear all Patent Costs incurred by Takeda for the Prosecution and Maintenance of the Takeda Prosecuted Patent Rights in the Takeda Territory. Takeda will provide Arrowhead with material communications from any patent authority in the Territory regarding the Takeda Prosecuted Patent Rights, as well as a reasonable opportunity to review and comment on drafts of any material filings or responses to be made to such patent

authorities in advance of submitting such filings or responses. Takeda will consider Arrowhead's comments regarding such communications and drafts in good faith. In addition, Takeda will provide Arrowhead with copies of all final material filings and responses made to any Patent Office with respect to the Takeda Prosecuted Patent Rights in a timely manner following submission thereof. Arrowhead will (1) promptly after the Effective Date provide to Takeda or counsel designated by Takeda the file histories for, and correspondence with foreign patent counsel related to, the Arrowhead AAT-Specific Patent Rights, (2) provide to Takeda promptly after the Effective Date a report detailing the status of the Arrowhead AAT-Specific Patent Rights, and (3) provide all assistance reasonably requested by Takeda in Takeda's Prosecution and Maintenance of the Arrowhead AAT-Specific Patent Rights and Program Patent Rights (including by executing all requested documents and providing additional information with respect to the applicable Patent Rights). For the avoidance of doubt, other than with respect to the Takeda Program Patent Rights as detailed above, Takeda will control, at its sole cost and expense, and in its sole discretion, the Prosecution and Maintenance of all Patent Rights within the Takeda Technology.

- (ii) If Arrowhead determines in its sole discretion to abandon or not to Prosecute and Maintain any Arrowhead Platform Patent Right, then Arrowhead will provide Takeda with written notice promptly after such determination, and subject to Arrowhead's existing restrictions and obligations under any Pre-Existing Third Party Agreements to the extent sections containing such restrictions and obligations are set forth on Schedule 1.164 (Pre-Existing Third Party Agreements) with respect to the Arrowhead Platform Patent Rights, Takeda shall determine, on a country-by-country basis, in its sole discretion, its interest in Prosecuting and Maintaining such Patent Rights in the Territory (which notice by Arrowhead will be given no later than [\*\*\*] prior to the final deadline for any pending action or response that may be due with respect to such Patent Right with the applicable Patent Office). If Takeda provides written notice to Arrowhead expressing its interest in Prosecuting and Maintaining such Patent Right, then, with respect to such Patent Right in such country in the Territory, (A) Takeda may, in its sole discretion and at Takeda's cost and expense, Prosecute and Maintain or abandon such Patent Right, and (B) Arrowhead will promptly: (I) provide to Takeda or counsel designated by Takeda the file histories for, and correspondence with foreign patent counsel related to, such Patent Right, (II) provide to Takeda a report detailing the status of such Patent Right as of the applicable date of such notice by Arrowhead, and (III) provide all assistance reasonably requested by Takeda in Takeda's Prosecution and Maintenance of the applicable Patent Rights (including by executing all requested documents and providing additional information with respect to the applicable Patent Rights).

(b) **Arrowhead's Right.**

- (i) Beginning on the Effective Date, as between the Parties, Arrowhead will be responsible for and control the Prosecution and Maintenance of all Arrowhead Platform Patent Rights in the Territory using outside patent counsel of its choice. Arrowhead will bear all Patent Costs incurred for the Prosecution and Maintenance of the Arrowhead Platform Patent Rights. Arrowhead will keep Takeda reasonably informed of all substantive matters relating to the Prosecution and Maintenance of the Arrowhead Platform Patent Rights, including providing Takeda with all material communications from any patent authority in the Territory regarding the Arrowhead Platform Patent Rights, as well as a reasonable opportunity to review and comment on drafts of any material filings or responses to be made to such patent authorities in advance of submitting such filings or responses. Arrowhead will consider in good faith Takeda's comments, requests, and suggestions with respect to strategies for Prosecution and Maintenance of the Arrowhead Platform Patent Rights. In addition, Arrowhead will provide Takeda with copies of all final material filings and responses made to any Patent Office with respect to the Arrowhead Platform Patent Rights in a timely manner following submission thereof. Arrowhead will (A) promptly after the Effective Date provide to Takeda or counsel designated by Takeda the file histories for, and correspondence with foreign patent counsel related to, the Arrowhead Platform Patent Rights, and (B) provide to Takeda promptly after the Effective Date a report detailing the status of the Arrowhead Platform Patent Rights.
  
- (ii) If Takeda determines in its sole discretion to abandon or not to Prosecute and Maintain any Arrowhead AAT-Specific Patent Right or Joint Program Patent Right, then Takeda will provide Arrowhead with written notice promptly after such determination to allow Arrowhead a reasonable period of time to determine, on a country-by-country basis, in its sole discretion, its interest in Prosecuting and Maintaining such Patent Rights in the Territory (which notice by Takeda will be given no later than [\*\*\*] prior to the final deadline for any pending action or response that may be due with respect to such Patent Right with the applicable Patent Office). If Arrowhead provides written notice to Takeda expressing its interest in Prosecuting and Maintaining such Patent Right, then, with respect to such Patent Right in such country in the Territory, (A) Arrowhead may, in its sole discretion and at Arrowhead's cost and expense, Prosecute and Maintain or abandon such Patent Right, and (B) Takeda will promptly: (I) provide to Arrowhead or counsel designated by Arrowhead the file histories for, and correspondence with foreign patent counsel related to, such Patent Right, (II) provide to Arrowhead a report detailing the status of such Patent Right as of the applicable date of such notice by Takeda, and (III) provide all assistance reasonably requested by Arrowhead in Arrowhead's Prosecution and Maintenance of the applicable Patent Rights (including by executing all requested documents and providing additional information with respect to the applicable Patent Rights).

- (c) **Cooperation.** The Parties will, and will cause their Affiliates to, cooperate and implement reasonable patent filing and prosecution strategies (including filing divisionals, continuations or otherwise) so that, to the extent reasonable and feasible, Arrowhead AAT-Specific Patent Rights and Arrowhead Platform Patent Rights are pursued in mutually exclusive patent applications (which may be simultaneously filed) where reasonably practicable.

**14.3. Third Party Infringement and Defense.** The Parties will conduct the enforcement and defense of the applicable Patent Rights in accordance with this Section 14.3 (Third Party Infringement and Defense).

**14.3.1. Notices.** Each Party will promptly report in writing to the other Party any Competitive Infringement of which such Party (or any of its Affiliates or Sublicensees) becomes aware, and will provide the other Party with all available evidence of such Competitive Infringement in such Party's control.

**14.3.2. Infringement Actions.**

(a) **Takeda's Right.**

- (i) As between the Parties, Takeda will have (A) the first right, but not the obligation, to bring an appropriate suit or other action to abate any existing, alleged, or threatened Competitive Infringement involving the Arrowhead AAT-Specific Patent Rights or Joint Program Patent Rights, and (B) the sole right, but not the obligation, to bring an appropriate suit or other action to abate any existing, alleged, or threatened Competitive Infringement involving the Takeda Program Patent Rights.
- (ii) Takeda will notify Arrowhead of its decision as to whether to take any action in accordance with Section 14.3.2(a)(i) at least [\*\*\*] before any time limit set forth in an applicable Law or regulation, or within [\*\*\*] after being notified of such Competitive Infringement, whichever is shorter. If Takeda decides not to take such action with respect to any Arrowhead AAT-Specific Patent Right or Joint Program Patent Right, then Takeda will so notify Arrowhead in writing, and following discussion with Takeda and consideration in good faith of any rationale provided by Takeda as to why Takeda elected not to take such action, and with Takeda's written consent (not to be unreasonably withheld) following consideration in good faith of any rationale provided by Arrowhead, Arrowhead will have the right, but not the obligation, to commence a suit or take action to enforce the applicable Arrowhead AAT-Specific Patent Right or Joint Program Patent Right to abate such Competitive Infringement in the Territory, by counsel of its own choice and at its own expense.

(b) **Arrowhead's Right.**

- (i) As between the Parties, Arrowhead will have the first right, but not the obligation, to bring an appropriate suit or other action to abate any

existing, alleged, or threatened Competitive Infringement involving the Arrowhead Platform Patent Rights, *provided* that Arrowhead will seek and reasonably consider Takeda's comments before determining the strategy for enforcing any Arrowhead Platform Patent Right.

- (ii) Arrowhead will notify Takeda of its decision as to whether to take any action in accordance with Section 14.3.2(a)(i) at least [\*\*\*] before any time limit set forth in an applicable Law or regulation, or within [\*\*\*] after being notified of such Competitive Infringement, whichever is shorter. If Arrowhead decides not to take such action with respect to any Arrowhead Platform Patent Right, then Arrowhead will so notify Takeda in writing, and following discussion with Arrowhead and consideration in good faith of any rationale provided by Arrowhead as to why Arrowhead elected not to take such action, and with Arrowhead's written consent (not to be unreasonably withheld) following consideration in good faith of any rationale provided by Takeda, Takeda will have the right, but not the obligation, to commence a suit or take action to enforce the applicable Arrowhead Platform Patent Right to abate such Competitive Infringement in the Territory, by counsel of its own choice and at its own expense.
- (c) **Hatch-Waxman.** Notwithstanding any provision to the contrary in this Agreement, should a Party receive a certification for a Product pursuant to the Hatch-Waxman Act, or its equivalent in a country other than the U.S., with respect to any activities under this Agreement in the Field, then such Party will [\*\*\*] provide the other Party with a copy of such certification. For each Product, Takeda will have [\*\*\*] from the date on which it receives or provides a copy of such certification to provide written notice to Arrowhead ("**H-W Suit Notice**") whether Takeda will bring suit, at its expense, within a [\*\*\*] period from the date of such certification. Should such [\*\*\*] period expire without Takeda bringing suit or providing such H-W Suit Notice, then Arrowhead will be free to bring suit in its name (i) if such certification is with respect to U.S. patents or (ii) upon Takeda's written consent, not to be unreasonably withheld, conditioned or delayed, if such certification is with respect to patents for any country other than the U.S. and there is at such time an ongoing suit or there may be in the future a suit regarding a certification for a Product pursuant to the Hatch-Waxman Act in the U.S.
- (d) **Cooperation.** Each Party will provide to the Party enforcing any such rights under this Section 14.3.2 (Infringement Actions) reasonable assistance in such enforcement, at such enforcing Party's request and expense, including joining such action as a party plaintiff if required by applicable Law to pursue such action or providing the enforcing Party any reasonably requested documentation or other materials. The enforcing Party will keep the other Party regularly informed of the status and progress of such enforcement efforts, including providing the other Party a reasonable opportunity to comment on the enforcing Party's determination of litigation strategy and the filing of important papers to the competent court and the enforcing Party will consider such comments in good faith. If one Party elects to bring suit or take action against the Competitive Infringement, then the other Party will have the right, during or prior to commencement of the trial, suit, or

action, to join any such suit or action at such other Party's own expense by counsel of its own choice, but such other Party will at all times reasonably cooperate with the Party bringing such action.

- (e) **Expenses.** Subject to this Section 14.3.2(e) (Expenses) and Section 14.3.2(g) (Allocation of Proceeds), the enforcing Party will be responsible for all expenses arising from a suit or action against a Competitive Infringement. The Parties will share the applicable Patent Costs incurred by Takeda arising from a suit or action initiated by Takeda as the enforcing Party against a Competitive Infringement with respect to such Product in the Profit-Share Territory accordance with Section 10.2.1 (Profit and Loss Share) and with respect to any other Competitive Infringement, Takeda will bear all such Patent Costs. For the avoidance of doubt, the enforcing Party will not be responsible for the other Party's internal expenses (*e.g.*, FTEs) incurred as a result of the other Party's cooperation with the enforcement action as provided in this Section 14.3.2 (Infringement Actions).
- (f) **Settlement.** Neither Party will settle any claim, suit, or action that it brought under this Section 14.3.2 (Infringement Actions) in a manner that could reasonably be expected to affect the other Party's rights or interests without the prior written consent of the other Party, which consent will not be unreasonably withheld.
- (g) **Allocation of Proceeds.** If either Party recovers monetary damages from any Third Party in a suit in the Territory pursuant to this Section 14.3.2 (Infringement Actions) or any royalties from a license agreement with a Third Party related to any alleged Competitive Infringement, whether or not such damages or royalties result from the infringement of Takeda Prosecuted Patent Rights, then such recovery will be allocated first to the reimbursement of any expenses incurred by each Party in such litigation, action, or license, and any remaining amounts will be split as follows: (i) with respect to Products in the Takeda Territory, (A) if Takeda brings the action, then [\*\*\*] and [\*\*\*], and (B) if Arrowhead brings the action, then [\*\*\*] and [\*\*\*], and (ii) with respect to Products in the Profit-Share Territory, all recoveries, net of any expenses that were not shared equally by the Parties, will be split [\*\*\*] to Arrowhead and [\*\*\*] to Takeda.

**14.3.3. Defense.** As between the Parties, the Party controlling the Prosecution and Maintenance of any Patent Right under Section 14.2 (Prosecution and Maintenance of Patent Rights), will have the right (but not the obligation), at its sole discretion, to defend against a declaratory judgment action, post-grant review proceeding, *inter partes* review, opposition proceeding, interference, or any other legal or administrative action challenging any such Patent Right. If the Party controlling such Prosecution and Maintenance of Arrowhead Patent Rights or Joint Program Patent Rights under Section 14.2 (Prosecution and Maintenance of Patent Rights) does not defend such Patent Right under this Section 14.3.3 (Defense) within [\*\*\*], or elects not to continue any such defense (in which case it will promptly provide notice thereof to the other Party), then the other Party will have the right (but not the obligation), at its sole discretion, to defend any such Patent Right. The non-defending Party will reasonably cooperate with the Party conducting the defense of such Third Party action, including if required to conduct such defense, furnishing a power of attorney. Any awards or amounts received in defending any such action will be allocated

between the Parties as provided in 14.3.2(g) (Allocation of Proceeds).

#### 14.3.4. Infringement of Third Party Rights.

- (a) **Notice.** If any Product becomes the subject of a Third Party's claim or assertion of infringement of a Patent Right within the Territory, the Party first having notice of the claim or assertion will promptly notify the other Party through the JSC.
- (b) **Defense.** Except as otherwise provided in Article 13 (Indemnification; Limitation of Liability; Insurance), Takeda will have the first right, but not the obligation, to defend any such Third Party claim or assertion of infringement of a Patent Right, (i) at Takeda's expense in the Takeda Territory or (ii) in the Profit-Share Territory, with expenses incurred in connection with the defense against such Third Party claim shared as Other Operating Expenses. The non-defending Party will reasonably cooperate with the Party conducting the defense of the claim or assertion, including if required to conduct such defense, furnishing a power of attorney.
- (c) **Settlement; Licenses.** Except as otherwise provided in Article 13 (Indemnification; Limitation of Liability; Insurance), neither Party will enter into any settlement of any claim described in this Section 14.3.4 (Infringement of Third Party Rights) that affects the other Party's rights or interests without such other Party's written consent, such consent not to be unreasonably withheld. Each Party will have the right to decline to defend or to tender the defense of any claim described in this Section 14.3.4 (Infringement of Third Party Rights) upon reasonable written notice to the other Party, including if the other Party fails to agree to a settlement that the declining Party proposes. Except as otherwise provided in Article 13 (Indemnification; Limitation of Liability; Insurance), any settlement or license fees incurred by a Takeda under this Section 14.3.4(c) (Settlement; Licenses) will (i) to the extent attributable to the Takeda Territory, be allocated in accordance with the principle set forth in Section 10.2.5(c) (Third Party Payments) and (ii) to the extent attributable to the Profit-Share Territory, be allocated in accordance with the principle set forth in Section 10.2.1 (Profit and Loss Share), in each case to the extent that the intellectual property that is the subject of such settlement license Covers the making, using, selling, offering for sale, or importing of a Product in the relevant country for which such rights are licensed thereunder.

**14.3.5. Other Invalidity or Unenforceability Proceedings.** If either Party desires to bring an opposition, action for declaratory judgment, nullity action, interference, declaration for non-infringement, reexamination, post-grant proceedings, or other attack upon the validity, title or enforceability of a Patent Right owned or controlled by a Third Party and having [\*\*\*] or more claims that Cover a Product, or the use, sale, offer for sale or importation of a Product (except insofar as such action is a counterclaim to or defense of, or accompanies a defense of, a Third Party's claim or assertion of infringement under Section 14.3.4 (Infringement of Third Party Rights), in which case the provisions of Section 14.3.4 (Infringement of Third Party Rights) shall govern), such Party shall so notify the other



Party and the Parties shall promptly confer to determine whether to bring such action or the manner in which to settle such action.

- 14.4. Patent Right Extensions.** Takeda will have the sole right to elect and file for patent term restoration or extension, supplemental protection certificate, or any of their equivalents with respect to Takeda Prosecuted Patent Rights in the Territory. Takeda will inform Arrowhead of any such decision. Takeda will be responsible for applying for any patent term extension. Upon the request by Takeda, Arrowhead will reasonably cooperate in the implementation of Takeda's decisions made pursuant to this Section 14.4 (Patent Right Extensions). The Parties will share the applicable Patent Costs incurred by Takeda in furtherance of such filing in the Profit-Share Territory for such Product in accordance with Section 10.2.1 (Profit and Loss Share), and for any Product in the Takeda Territory, Takeda will bear all such Patent Costs.
- 14.5. Third Party Rights.** Notwithstanding anything in this Article 14 (Intellectual Property) to the contrary, the Parties' rights and obligations with respect to any Patent Right Controlled pursuant to a Shared In-License under this Article 14 (Intellectual Property) will be subject to the Third Party rights and obligations under any such applicable Shared In-Licenses.
- 14.6. Orange Book Listing.** Takeda and Arrowhead will discuss in good faith the Arrowhead Patent Rights or Program Patent Rights that will be included in the Orange Book maintained by the FDA or similar or equivalent patent listing or linking source, if any, in other countries in the Territory for Products, and, after considering Arrowhead's comments in good faith, Takeda will have the sole right to determine which Patent Rights will be included. Arrowhead will provide such assistance as may be reasonably requested by Takeda in connection with such listing.
- 14.7. Trademarks.** Takeda will have the right to brand Products using Takeda-related Trademarks and any other Trademarks it determines appropriate, which may vary by country or within a country. Takeda will own all rights in such Trademarks and shall have the sole right to register and maintain such Trademarks in the countries and regions that it determines, at Takeda's cost and expense.
- 14.8. Common Interest.** All information exchanged between the Parties regarding the Prosecution and Maintenance, defense, and enforcement, of the Patent Rights under this Article 14 (Intellectual Property) will be deemed Confidential Information of the disclosing Party. In addition, the Parties acknowledge and agree that, with regard to such Prosecution and Maintenance, defense, and enforcement of the Patent Rights under this Article 14 (Intellectual Property), the interests of the Parties as licensor and licensee are to obtain the strongest patent protection possible, and as such, are aligned and are legal in nature. The Parties agree and acknowledge that they have not waived, and nothing in this Agreement constitutes a waiver of, any legal privilege concerning the Patent Rights under this Article 14 (Intellectual Property), including privilege under the common interest doctrine and similar or related doctrines. Notwithstanding any provision to the contrary contained herein, to the extent a Party has a good faith belief that any information required to be disclosed by such Party to the other Party under this Article 14 (Intellectual Property) is protected by attorney-client privilege or any other applicable legal privilege or immunity, such Party will not be required to disclose such information and the Parties will in good faith cooperate to agree upon a procedure (including entering into a specific common interest agreement, disclosing such information on a "for counsel eyes only" basis or similar procedure) under which such information may be disclosed without waiving or breaching such privilege or immunity.

## 15. TERM AND TERMINATION

**15.1. Term.** This Agreement will be effective as of the Effective Date and, unless terminated earlier, will continue on a Product-by-Product and country-by-country basis until the date on which, (a) in any country in the Takeda Territory, the Royalty Term has expired in such country; and (b) for any Product in the Profit-Share Territory, for so long as Takeda continues to Exploit such Product (collectively, the “**Term**”). Upon expiration of the Royalty Term for a Product in any country in the Territory, the licenses granted from Arrowhead to Takeda in Section 2.1 (License Grants to Takeda) with respect to such Product, in such country will become fully paid, irrevocable, and perpetual.

### 15.2. Termination for Convenience.

**15.2.1. Prior to First Commercial Sale.** Takeda may terminate this Agreement for convenience in its entirety or on a Product-by-Product basis in [\*\*\*], upon [\*\*\*] written notice to Arrowhead prior to the First Commercial Sale of the first Product for which First Commercial Sale occurs in the Territory or the applicable Major Market(s).

**15.2.2. After First Commercial Sale.** Takeda may terminate this Agreement for convenience in its entirety or on a Product-by-Product basis in part with respect to either (a) [\*\*\*] or (b) [\*\*\*] upon [\*\*\*] written notice to Arrowhead following the First Commercial Sale of the first Product for which First Commercial Sale occurs in the Territory or the applicable Major Market(s).

**15.3. Termination for Bankruptcy.** Takeda may terminate this Agreement in its entirety upon providing written notice to Arrowhead on or after the time that Arrowhead makes a general assignment for the benefit of creditors, files an insolvency petition in bankruptcy, petitions for or acquiesces in the appointment of any receiver, trustee or similar officer to liquidate or conserve its business or any substantial part of its assets, commences under the laws of any jurisdiction any proceeding involving its insolvency, bankruptcy, reorganization, adjustment of debt, dissolution, liquidation or any other similar proceeding for the release of financially distressed debtors, or becomes a party to any proceeding or action of the type described above, and such proceeding or action remains un-dismissed or un-stayed for a period of more than [\*\*\*]. In the case of any involuntary bankruptcy proceeding, such right to terminate will only become effective Arrowhead consents to the involuntary bankruptcy or such proceeding is not dismissed within [\*\*\*] after the filing thereof. In the event of any termination pursuant to this Section 15.3 (Termination for Bankruptcy), the following will apply:

**15.3.1. Section 365(N).** All rights and licenses granted under or pursuant to this Agreement are, and will otherwise be deemed to be, for purposes of Section 365(n) of Title 11 of the United States Code and other similar laws in any jurisdiction outside the U.S. (collectively, the “**Bankruptcy Laws**”), licenses of rights to “intellectual property” as defined under the Bankruptcy Laws. If a case is commenced during the Term by or against Arrowhead under Bankruptcy Laws then, unless and until this Agreement is rejected as provided pursuant to such Bankruptcy Laws, Arrowhead (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee) will perform all of the obligations in this Agreement intended to be performed by Arrowhead. If a case is commenced during the Term by or against Arrowhead under the Bankruptcy Laws, this Agreement is rejected

as provided for under the Bankruptcy Laws, and Takeda elects to retain its rights hereunder as provided for under the Bankruptcy Laws, then Arrowhead (in any capacity, including debtor-in-possession) and its successors and assigns (including a Title 11 trustee), will provide to Takeda copies of all Patent Rights and information necessary for Takeda to prosecute, maintain and enjoy its rights under the terms of this Agreement. All rights, powers, and remedies of Takeda as provided herein are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity (including the Bankruptcy Laws) in the event of the commencement of a case by or against Arrowhead under the Bankruptcy Laws. In particular, it is the intention and understanding of the Parties to this Agreement that the rights granted to Takeda under this Section 15.3 (Termination for Bankruptcy) are essential to Takeda's respective businesses and the Parties acknowledge that damages are not an adequate remedy in the event of any termination described in this Section 15.3 (Termination for Bankruptcy).

**15.3.2. Cumulative Remedies.** All rights, powers, and remedies of Takeda provided in this Section 15.3 (Termination for Bankruptcy) are in addition to and not in substitution for any other rights, powers, and remedies now or hereafter existing at law or in equity (including the U.S. Bankruptcy Code) in the event of the commencement of a case under the U.S. Bankruptcy Code with respect Arrowhead. The Parties intend the following rights to extend to the maximum extent permitted by applicable Law, and to be enforceable under U.S. Bankruptcy Code Section 365(n):

- (a) the right of access to any intellectual property rights (and all embodiments thereof) of Arrowhead, or any Third Party with whom Arrowhead contracts to perform any obligation of it (or its Affiliates) under this Agreement, and, in the case of any such Third Party, that is necessary for the Exploitation of Products; and
- (b) the right to contract directly with any Third Party to complete the contracted work.

#### **15.4. Termination for Material Breach.**

**15.4.1. Material Breach.** Either Party (the "**Non-Breaching Party**") may terminate this Agreement (a) with respect to one or more Major Markets (a "**Terminated Country**") in the event the other Party (the "**Breaching Party**") has materially breached this Agreement in such Major Market or (b) in its entirety in the event the Breaching Party has materially breached this Agreement as a whole or with respect to all Major Markets (and in such case, the entire Territory will constitute Terminated Countries), subject to the notice, Cure Period, and dispute resolution procedures set forth in this Section 15.4 (Termination for Material Breach).

**15.4.2. Process for Termination.** If a Party materially breaches its obligations under this Agreement as a whole or with respect to one or more Major Markets, then the Non-Breaching Party may give written notice to the Breaching Party identifying such alleged material breach in sufficient detail to put the Breaching Party on notice of such material breach, and the Breaching Party will cure such material breach within [\*\*\*] after delivery of such notice (the "**Cure Period**"). Any termination of this Agreement pursuant to this Section 15.4.2 (Process for Termination) will become effective at the end of the Cure Period, unless the Breaching Party has cured any such material breach prior to the

expiration of such Cure Period or, if such material breach is not susceptible to cure within the Cure Period, then the Cure Period will be extended so long as (i) the Breaching Party has provided to the Non-Breaching Party a written plan that is reasonably calculated to effect a cure of such material breach within the original Cure Period, (ii) such plan is accepted by the Non-Breaching Party (such acceptance not to be unreasonably withheld, conditioned, or delayed), and (iii) the Breaching Party commits to and diligently carries out such plan as provided to the Non-Breaching Party, *provided* that in no event will the Cure Period be extended to more than a total of [\*\*\*]. The right of either Party to terminate this Agreement as provided in this Section 15.4.2 (Process for Termination) will not be affected in any way by such Party's waiver of or failure to take action with respect to any previous breach under this Agreement.

**15.4.3. Disputes Regarding Material Breach.** If the Parties reasonably and in good faith disagree as to whether there has been a material breach of this Agreement, then the Breaching Party that disputes whether there has been a material breach may contest the allegation in accordance with Section 17.3 (Dispute Resolution), and the Cure Period will toll upon the initiation of the dispute resolution procedures under (a) Section 17.3.2 (Resolution by Executive Officers) and (b) Section 17.3.3 (Litigation), Section 17.3.4 (Preliminary Injunctions), or Section 17.3.5 (Patent and Trademark Disputes), as applicable, solely to the extent such procedures, legal actions, proceedings or claims are instituted prior to the end of the applicable Cure Period. If, as a result of such dispute resolution process, it is determined pursuant to Section 17.3 (Dispute Resolution) that the Breaching Party committed a material breach of this Agreement, then the Cure Period will resume and if the Breaching Party does not cure such material breach within the remainder of the Cure Period (as such Cure Period may be extended pursuant to Section 15.4.2 (Process for Termination) above), then this Agreement will terminate effective as of the expiration of such Cure Period. This Agreement will remain in full force and effect during the pendency of any such dispute resolution proceeding and the Cure Period. Any such dispute resolution proceeding will not suspend any obligations of either Party hereunder, and each Party will use reasonable efforts to mitigate any damage. Any payments that are made by one Party to the other Party pursuant to this Agreement pending resolution of the Dispute will be promptly refunded if it is determined pursuant to Section 17.3 (Dispute Resolution) that such payments are to be refunded by one Party to the other Party. If, as a result of such dispute resolution proceeding, it is determined that the Breaching Party did not commit such material breach (or such material breach was cured in accordance with this Section 15.4 (Termination for Material Breach)), then no termination of this Agreement will be effective, and this Agreement will continue in full force and effect.

**15.5. Termination For Safety Reasons.** Takeda may terminate this Agreement in its entirety at any time upon [\*\*\*] prior written notice to Arrowhead (a) if senior executives responsible for Takeda's pharmacovigilance and clinical science functions determine in good faith that the risk/benefit profile of the Product is such that the Product cannot continue to be Developed or administered to patients safely, or (b) upon (i) the receipt of a material adverse regulatory determination by a Regulatory Authority in a Major Market regarding the Product (such as a Clinical Trial hold or suspension of Regulatory Approval), or (ii) the occurrence of serious Adverse Events related to the use of the Product that reasonably impact the patient population in the aggregate and that cause Takeda to conclude that the continued use of the Product by patients will result in the patient population being exposed to a product for which the risks outweigh the benefits and that such risks

cannot be ameliorated. In connection with such termination, Takeda will provide reasonable documentation to Arrowhead of the rationale for making any such determination.

**15.6. Effects of Termination.** Upon termination (but not expiration) of this Agreement with respect to one or more Terminated Countries, in addition to the other rights and remedies that may be available to either of the Parties under this Agreement, the following will apply:

**15.6.1. Effects of Termination Generally.**

- (a) **Termination of Licenses.** As of the effective date of termination of this Agreement, all licenses granted under Article 2 (License Grant) with respect to the Products in the Terminated Countries will terminate, and all sublicenses granted by Takeda or its Affiliates pursuant to Section 2.2 (Sublicensing Terms) with respect to the Products in the Terminated Countries will also terminate, unless the applicable Sublicensee is not then in breach of its sublicense agreement or the terms of this Agreement applicable to such Sublicensee and elects in writing prior to such termination to be granted a direct license from Arrowhead.
- (b) **Return of Confidential Information.** As soon as reasonably practicable after the effective date of termination of this Agreement, each Party will promptly destroy (and certify such destruction in writing) or return to the other Party all of such other Party's Confidential Information relating to the Terminated Countries, except that such Party will have the right to retain a copy of tangible Confidential Information of such other Party for legal archival purposes.
- (c) **Termination of Payment Obligations.** All payment obligations hereunder with respect to the Products in the Terminated Countries shall terminate, other than those that are accrued and unpaid as of the effective date of such termination. For clarity, notwithstanding any other provision of this Agreement, Takeda shall remain liable to pay any Milestone Payments or Royalties to Arrowhead, in each case relating to the Terminated Countries and in connection with any transpired Milestone Events occurring, or deemed to have occurred in accordance with the terms of this Agreement, or Net Sales booked by Takeda (in accordance with applicable Accounting Standards) on or before the effective date of such termination.
- (d) **Sell-Off Right.** Subject to the payment of all amounts required under Section 15.6.1(c) (Termination of Payment Obligations) above, Takeda shall have the right to sell or otherwise dispose of, in the Terminated Countries, any inventory of any Product on hand at the time of such termination or in the process of Manufacturing for a period of [\*\*\*] following the effective date of termination in such Terminated Countries; *provided* that [\*\*\*].

**15.6.2. Effects of Certain Termination.** In the event of termination of this Agreement by Arrowhead pursuant to Section 15.4 (Termination for Material Breach) or by Takeda pursuant to Section 15.2 (Termination for Convenience), then, in addition to those general effects set forth in Section 15.6.1 (Effects of Termination Generally), upon such

termination the following terms of this Section 15.6.2 (Effects of Certain Termination) will apply:

- (a) Upon termination of this Agreement, at Arrowhead's written request, Takeda shall:
- (i) grant to Arrowhead an exclusive, worldwide, royalty-bearing (to the extent provided in Section 15.6.2(b) below), sublicensable (through multiple tiers) license under all Program Know-How and Program Patent Rights existing as of the effective date of termination and Controlled by Takeda or its Affiliates that is necessary to Exploit any Product in the Terminated Countries (the "**Takeda Reversion IP**") to Exploit such Product(s) in the Terminated Countries, and (A) Arrowhead will be deemed to be the prosecuting Party with respect to any such Program Patent Rights within the Takeda Reversion IP, and (B) Section 14.2 (Prosecution and Maintenance of Patent Rights), Section 14.3 (Third Party Infringement and Defense), and Section 14.4 (Patent Right Extensions) will apply *mutatis mutandis* to the prosecution, maintenance, enforcement, and defense of such Program Patent Rights as they apply to Arrowhead and solely for such purpose, each reference in each such Section (and any related definitions) to (1) Takeda will be deemed to be a reference of Arrowhead and (2) Arrowhead will be deemed to be a reference of Takeda;
  - (ii) transfer to Arrowhead copies of all Program Know-How within the Takeda Reversion IP in Takeda's or its Affiliates' Control that is related to and necessary for the continued Exploitation of all such Product(s) in the Terminated Countries;
  - (iii) to the extent permissible under applicable Law, assign to Arrowhead any Regulatory Approvals or Regulatory Submissions Controlled by Takeda with regard to all such Product(s) in the Terminated Countries as of the effective date of termination;
  - (iv) if Arrowhead elects to complete any ongoing Clinical Trial in the Terminated Countries relating to such Product, Takeda will transfer such trials to Arrowhead to the extent possible and to the extent permissible under applicable Law and subject to the rights of any Third Party. After completion of transfer, all costs associated with the relevant Clinical Trial(s) shall be borne by Arrowhead;
  - (v) at Arrowhead's request and, if relevant, at Arrowhead's sole cost and expense, and to the extent feasible under applicable Law and the terms of the applicable contract, assign to Arrowhead any contracts between Takeda or its Affiliates and any Third Party that exclusively relates to the Product(s) in the Terminated Countries; and
  - (vi) work with Arrowhead in good faith to assist Arrowhead with entering into an agreement with Takeda's existing CMO to be supplied Products by

such contract manufacturer to the extent feasible and agreed to by such existing CMO.

- (b) Except in the event of termination of this Agreement by Arrowhead pursuant to Section 15.4 (Termination for Material Breach), in which case no royalties shall be paid by Arrowhead to Takeda, if Takeda grants a license to Arrowhead under the Takeda Reversion IP in accordance with Section 15.6.2(a)(i), then:
  - (i) on a Product-by- Product basis and country-by-country basis within the Terminated Countries, for so long as Arrowhead or its Affiliates or licensees sell such Product, Arrowhead will pay Takeda royalties on the aggregate worldwide Net Sales resulting from the sale of each such Product during each [\*\*\*] for each Product in each country within the Territory, at a reasonable royalty rate to be agreed by the Parties at the time of the applicable termination; and
  - (ii) for the purposes of this Section 15.6.2(b), the definition of “Net Sales” and Section 10.2.4 (Takeda Territory Royalties) and Section 10.4 (Payment Terms) will apply *mutatis mutandis* to the calculation, payment, recording and auditing of Arrowhead’s obligations to pay royalties under this Section 15.6.2(b) as they apply to Takeda and, solely for such purpose, each reference in each such Section (and any related definitions) to (A) Takeda will be deemed to be a reference of Arrowhead and (B) Arrowhead will be deemed to be a reference of Takeda.

**15.7. Alternative Remedy in Lieu of Termination.** If Takeda has the right to terminate this Agreement pursuant to (a) Section 15.3 (Termination for Bankruptcy) or (b) Section 15.4 (Termination for Material Breach), subject to Section 15.4.3 (Disputes Regarding Material Breach), then in lieu of terminating this Agreement Takeda may, in its sole discretion, exercise an alternative remedy as follows, which will constitute its sole and exclusive remedy if so exercised:

- 15.7.1.** Takeda may retain all of its licenses and other rights granted under this Agreement, subject to all of its payment and other obligations, except that (a) the then-unearned Milestone Payments and the Royalties payable thereafter under this Agreement, in each case will be reduced by [\*\*\*] effective from and after the delivery of the applicable notice of breach and (b) Takeda’s obligations under Section 3.2.2 (Takeda Development Diligence Obligations) and Section 7.1.2 (Commercialization Diligence Obligations) will terminate; and
- 15.7.2.** any Confidential Information of Takeda provided to Arrowhead pursuant to this Agreement will be promptly returned to Takeda or destroyed, and Takeda will be released from its ongoing disclosure and information exchange obligations with respect to Development activities following the date of such election.
- 15.7.3.** For the avoidance of doubt, except as set forth in this Section 15.7 (Alternative Remedy in Lieu of Termination), if Takeda exercises the alternative remedy set forth above in this Section 15.7 (Alternate Remedy in Lieu of Termination), then all rights and obligations of both Parties under this Agreement will continue unaffected, unless and until this

Agreement is subsequently terminated by either Party pursuant to this Article 15 (Term and Termination). In addition, and notwithstanding anything to the contrary set forth in this Agreement, if Arrowhead disputes the allegation of a material breach pursuant to Section 15.4.3 (Disputes Regarding Material Breach), and it is determined, as a result of the dispute resolution process set forth in Section 17.3 (Dispute Resolution), that Takeda has the right to terminate this Agreement pursuant to Section 15.4 (Termination for Material Breach) based on the uncured material breach by Arrowhead or pursuant to S Section 15.3 (Termination for Bankruptcy), then the adjustments of royalty rates contemplated by this Section 15.7 (Alternative Remedy in Lieu of Termination) will be deemed effective since the date of notice of the applicable material breach, and Takeda will have the right to credit any overpayment that has been made during the dispute resolution process against future payments payable to Arrowhead.

**15.8. Survival.** In addition to the termination consequences set forth in Section 15.6 (Effects of Termination), the following provisions will survive the expiration or termination of this Agreement for any reason: all of Article 1 (Definitions), Section 2.6 (No Other Rights and Retained Rights), Section 3.3 (Scientific Records) (to the extent consistent with the applicable Party's record retention policies and applicable Law), Section 7.3 (Recalls, Market Withdrawals, or Corrective Actions), Article 10 (Payments) (solely with respect to amounts accrued prior to termination but not paid and the reporting and information sharing procedures associated therewith), Article 11 (Confidentiality and Publication), Article 13 (Indemnification; Limitation of Liability; Insurance), Section 14.1 (Inventions), Section 14.8 (Common Interest), Section 15.1 (Term) (solely in case of expiration), Section 15.7 (Alternative Remedy in Lieu of Termination), this Section 15.8 (Survival), and Article 17 (Miscellaneous). Expiration or termination of this Agreement for any reason will not relieve the Parties of any liability or obligation which accrued hereunder prior to the effective date of such termination or expiration, nor preclude either Party from pursuing all rights and remedies it may have hereunder or at law or in equity, with respect to any breach of this Agreement.

## **16. EFFECTIVENESS**

**16.1. Effective Date.** Except for the Parties' obligations under Article 11 (Confidentiality and Publication) and this Article 16 (Effectiveness), which will be effective as of the Execution Date, this Agreement will not become effective until the [\*\*\*] after the Antitrust Clearance Date (the "**Effective Date**"); *provided* that the Effective Date will not occur if Takeda exercises its termination right under Section 16.3 (Outside Date) prior to the Antitrust Clearance Date.

### **16.2. Filings.**

**16.2.1.** Each Party will, within [\*\*\*] following the Execution Date, file the notification and report forms required under all Antitrust Laws. The Parties will use reasonable efforts to cooperate with one another to the extent necessary in the preparation and execution of all such documents that are required to be filed pursuant to the Antitrust Laws. Each Party will be responsible for its own costs and expenses associated with any such filing pursuant to the Antitrust Laws. The Parties will each use reasonable efforts to ensure that any applicable waiting period under the Antitrust Laws expires or is terminated as soon as practicable and to obtain any necessary approvals or consents under any applicable Antitrust Laws, at the earliest possible date after the date of filing. Notwithstanding any provision to the contrary set forth in this Agreement, nothing in this Agreement (including



this Section 16.2 (Filings)) will require either Party or any of its Affiliates to (a) disclose to the other Party or any of its Affiliates any information that is subject to obligations of confidentiality or non-use owed to Third Parties (nor will either Party be required to conduct joint meetings with any Governmental Authority in which such information might be shared with the other Party) in connection with any Antitrust Filing, (b) commit to any consent decree or similar undertaking, or any divestiture, license (in whole or in part), or any arrangement to hold separate (or any similar arrangement) with respect to any of its products or assets, or (c) litigate.

**16.2.2.** In furtherance of the foregoing, each Party shall consult and cooperate with the other Party, including: (a) promptly notify the other of, and if in writing, furnish the other with copies of, any communications from or with any Governmental Authority with respect to this Agreement; (b) permit the other to review and discuss in advance, and consider in good faith the view of the other in connection with, any proposed substantive written or oral communication with any Governmental Authority; (c) not participate in any substantive meeting or have any substantive communication with any Governmental Authority unless it has given the other Party a reasonable opportunity to consult with it in advance and, to the extent permitted by such Governmental Authority, gives the other the opportunity to attend; (d) furnish the other Party's outside legal counsel with copies of all filings and communications between it and any such Governmental Authority with respect to this Agreement; *provided, however*, that such material may be redacted as necessary to (i) comply with contractual arrangements, (ii) address legal privilege concerns and (iii) comply with applicable Law; and (e) furnish the other Party's outside legal counsel with such necessary information and reasonable assistance as the other Party's outside legal counsel may reasonably request in connection with its preparation of necessary submissions of information to any such Governmental Authority. The Parties may, as they deem advisable and necessary, designate any competitively sensitive materials provided to the other under this Section 15.2 (Filings) as "outside counsel only." Such materials and the information contained therein shall be given only to outside counsel and outside economic consultants of the recipient and will not be disclosed by such outside counsel or outside economic consultants to employees, officers, or directors of the recipient without the advance written consent of the Party providing such materials. Notwithstanding anything to the contrary in this Section 15.2 (Filings), materials provided to the other Party or its outside legal counsel may be redacted to remove references concerning the valuation of the Compounds.

**16.3. Outside Date.** This Agreement will terminate at the election of Takeda, [\*\*\*] written notice to the other Party, in the event that the Antitrust Clearance Date will not have occurred on or prior to [\*\*\*] after the Execution Date and the Parties have not agreed in writing to extend the Antitrust Clearance Date. In the event of such termination, this Agreement will be of no further force and effect.

**17. MISCELLANEOUS.**

**17.1. Assignment.** Except as provided in this Section 17.1 (Assignment), this Agreement may not be assigned or otherwise transferred, nor may any right or obligation hereunder be assigned or transferred, by either Party without the written consent of the other Party. Notwithstanding the foregoing, either Party may, without the other Party's written consent, assign this Agreement and

its rights and obligations hereunder in whole or in part (i) to an Affiliate, *provided* that if the entity to which this Agreement is assigned ceases to be an Affiliate of the assigning Party, this Agreement will be automatically assigned back to the assigning Party or its successor, or (ii) to a party that acquires, by or otherwise in connection with a merger, sale of assets, or otherwise, all or substantially all of the business of the assigning Party, other than, in the case of such an assignment by Takeda to an Arrowhead Competitor without the prior written consent of Arrowhead. The assigning Party will remain responsible for the performance by its assignee of any obligation hereunder so assigned. Any purported assignment in violation of this Section 17.1 (Assignment) will be null, void, and of no legal effect.

**17.2. Governing Law.** This Agreement will be construed and the respective rights of the Parties determined in accordance with the substantive Laws of the State of New York, notwithstanding any provisions of New York Laws or any other Laws governing conflicts of laws to the contrary, and the patent Laws of the relevant jurisdiction without reference to any rules of conflicts of laws to the contrary.

**17.3. Dispute Resolution.**

**17.3.1. Exclusive Dispute Resolution Mechanism.** The Parties agree that, except as expressly set forth in this Agreement (including under Section 9.4.2 (Final Decision-Making Authority)), the procedures set forth in this Section 17.3 (Dispute Resolution) will be the exclusive mechanism for resolving any dispute, controversy, or claim between the Parties arising out of or relating to this Agreement (whether based on contract, tort or otherwise) (each, a “**Dispute**,” and collectively, the “**Disputes**”).

**17.3.2. Resolution by Executive Officers.** [\*\*\*], [\*\*\*].

**17.3.3. Litigation.** With the exception of (i) legal actions, proceedings, or claims described in Section 17.3.4 (Preliminary Injunctions) and (ii) Section 17.3.5 (Patent and Trademark Disputes) below, any legal action or proceedings to resolve a Dispute that was subject to and not resolved under Section 17.3.2 (Resolution by Executive Officers) will be brought exclusively in a court of competent jurisdiction, federal or state, located in New York, New York, and in no other jurisdiction. Each Party hereby irrevocably consents to personal jurisdiction and venue in, and irrevocably agrees to service of process issued or authorized by, any such court in any such action or proceeding. The Parties hereby irrevocably waive any objection which they may now have or hereafter have to the laying of venue in the federal or state courts of New York in any such action or proceeding, and hereby irrevocably waive and agree not to plead or claim in any such court that any such action or proceeding brought in any such court has been brought in an inconvenient forum. The Parties hereby agree that any final judgment rendered by any such federal or state court of New York in any action or proceeding involving any Dispute, from which no appeal can be or is taken, may be enforced by the prevailing Party in any court of competent jurisdiction.

**17.3.4. Preliminary Injunctions.** Notwithstanding any provision to the contrary set forth in this Agreement, in the event of an actual or threatened breach of a Party’s covenants or obligations under this Agreement, a Party may seek a temporary restraining order or a

preliminary injunction from any court of competent jurisdiction in order to prevent immediate and irreparable injury, loss, or damage on a provisional basis.

- 17.3.5. Patent and Trademark Disputes.** Notwithstanding any provision to the contrary set forth in this Agreement, any and all issues regarding the scope, construction, validity, and enforceability of any Patent Right or Trademark relating to a Product will be determined in a court or other tribunal, as the case may be, of competent jurisdiction under the applicable patent or trademark laws of the country in which such Patent Rights or Trademarks were granted or arose.
- 17.3.6. Confidentiality.** Any and all activities conducted under this Section 17.3 (Dispute Resolution), including any and all proceedings and decisions hereunder, will be deemed Confidential Information of each of the Parties, and will be subject to Article 11 (Confidentiality and Publication), to the extent permitted in accordance with applicable Law.
- 17.4. Entire Agreement; Amendments.** This Agreement, including its Schedules, contains the entire understanding of the Parties with respect to the subject matter hereof and supersedes all previous arrangements with respect to the subject matter hereof, whether written or oral. In the event of any inconsistency between any Co-Funded Development Plan, Co-Funded Commercialization Plan, or Co-Funded Medical Affairs Plan and this Agreement, in each case, the terms of this Agreement will prevail. This Agreement may be amended, or any term hereof modified or waived, only by a written instrument duly-executed by authorized representatives of both Parties. For clarity, the Schedules attached hereto may be amended, or any term thereof modified, only by a written instrument duly-executed by authorized representatives of both Parties.
- 17.5. Severability.** If any provision hereof is held invalid, illegal, or unenforceable in any respect in any jurisdiction, then the Parties will negotiate in good faith to promptly substitute on agreed valid provisions for such invalid, illegal, or unenforceable provisions, which valid provisions in their economic effect are sufficiently similar to the invalid, illegal, or unenforceable provisions that most closely effectuate the original economic intent of the Parties. In case such valid provisions cannot be agreed upon, the invalid, illegal, or unenforceable nature of one or several provisions of this Agreement will not affect the validity of this Agreement as a whole, unless the invalid, illegal, or unenforceable provisions are of such essential importance to this Agreement that it is to be reasonably assumed that the Parties would not have entered into this Agreement without the invalid, illegal, or unenforceable provisions.
- 17.6. Headings.** The captions to the Sections hereof are not a part of this Agreement, but are merely for convenience to assist in locating and reading the several Sections hereof.
- 17.7. Waiver of Rule of Construction.** Each Party has had the opportunity to consult with counsel in connection with the review, drafting and negotiation of this Agreement. Accordingly, the rule of construction that any ambiguity in this Agreement will be construed against the drafting Party will not apply.
- 17.8. Interpretation.** Except where the context expressly requires otherwise, (a) the use of any gender herein will be deemed to encompass references to either or both genders, and the use of the singular will be deemed to include the plural (and vice versa); (b) the words “include”, “includes” and

“including” will be deemed to be followed by the phrase “without limitation” and will not be interpreted to limit the provision to which it relates; (c) the word “will” will be construed to have the same meaning and effect as the word “shall”; (d) any definition of or reference to any agreement, instrument or other document herein will be construed as referring to such agreement, instrument or other document as from time to time amended, supplemented or otherwise modified (subject to any restrictions on such amendments, supplements or modifications set forth herein); (e) any reference herein to any Person will be construed to include the Person’s successors and assigns; (f) the words “herein,” “hereof,” and “hereunder,” and words of similar import, will be construed to refer to this Agreement in its entirety, as the context requires, and not to any particular provision hereof; (g) all references herein to Sections or Schedules will be construed to refer to sections or schedules of this Agreement, and references to this Agreement include all Schedules hereto; (h) the word “notice” means notice in writing (whether or not specifically stated) and will include notices, consents, approvals and other written communications contemplated under this Agreement; (i) provisions that require that a Party, the Parties, or any committee hereunder “agree,” “consent,” or “approve” or the like will require that such agreement, consent or approval be specific and in writing, whether by written agreement, letter, approved minutes or otherwise (but excluding e-mail and instant messaging); (j) references to any specific law, rule, or regulation, or article, section, or other division thereof, will be deemed to include the then-current amendments thereto or any replacement or successor law, rule, or regulation thereof; (k) the term “or” will be interpreted in the inclusive sense commonly associated with the term “and/or” unless preceded by the word “either” or other language indicating the subjects of the conjunction are, or are intended to be, mutually exclusive; and (l) unless otherwise specified, “day” means a calendar day.

- 17.9. No Implied Waivers; Rights Cumulative.** No failure on the part of Takeda or Arrowhead to exercise, and no delay in exercising, any right, power, remedy or privilege under this Agreement, or provided by statute or at Law or in equity or otherwise, will impair, prejudice or constitute a waiver of any such right, power, remedy or privilege, or be construed as a waiver of any breach of this Agreement or as an acquiescence therein, nor will any single or partial exercise of any such right, power, remedy or privilege preclude any other or further exercise thereof or the exercise of any other right, power, remedy or privilege.
- 17.10. Notices.** All notices which are required or permitted hereunder will be in writing and sufficient if delivered personally, sent by email with confirmation of receipt, sent by nationally-recognized overnight courier or sent by registered or certified mail, postage prepaid, return receipt requested, addressed as follows:

If to Arrowhead, to:

Arrowhead Pharmaceuticals, Inc.  
177 East Colorado Boulevard, Suite 700  
Pasadena, California 91105  
Attention: General Counsel

With a copy (which will not constitute notice) to:

Gibson Dunn & Crutcher  
555 Mission Street, Suite 3000  
San Francisco, California 94105  
Attention: Ryan Murr

If to Takeda, to:

Takeda Pharmaceutical Company Limited  
1-1, Doshomachi 4-Chome, Chuo-ku  
Osaka 540-8645, Japan  
Attention: General Manager, Global Business Development

With a copy (which will not constitute notice) to:

Takeda Pharmaceutical Company Limited  
1-1, Doshomachi 4-chome, Chuo-ku,  
Osaka 540-8645, Japan  
Attention: Head of IP Licensing & R&D Contract,  
Japan Legal

Takeda Pharmaceuticals U.S.A., Inc.  
40 Landsdowne Street  
Cambridge, MA 02139  
Attention: Head of the Center for External Innovation

Ropes & Gray LLP  
Prudential Tower  
800 Boylston Street  
Boston, MA 02199-3600  
Attention: David M. McIntosh

or to such other address as the Party to whom notice is to be given may have furnished to the other Party in writing in accordance herewith. Any such notice will be deemed to have been given: (a) when delivered if personally delivered on a Business Day (or if delivered or sent on a non-Business Day, then on [\*\*\*]); (b) [\*\*\*] if sent by email on a Business Day (or if sent on a non-Business Day, then on [\*\*\*]); (c) on [\*\*\*] if sent by overnight courier; or (d) on [\*\*\*] if sent by mail.

- 17.11. Compliance with Export Regulations.** Neither Party will export any technology licensed to it by the other Party under this Agreement except in compliance with U.S. export Laws and regulations.
- 17.12. Force Majeure.** Neither Party will be held liable to the other Party nor be deemed to have defaulted under or breached this Agreement for failure or delay in achieving any objective, satisfying any condition, or performing any obligation under this Agreement to the extent that such failure or delay is caused by or results from acts or events beyond the reasonable control of such Party, including acts of God, embargoes, war, acts of war (whether war be declared or not), terrorism, insurrections, riots, civil commotions, strikes, lockouts, or other labor disturbances (other than strikes, lockouts, or labor disturbances involving a Party's own employees), government actions, fire, earthquakes, floods, epidemics, pandemics, the spread of infectious diseases, and quarantines ("**Force Majeure**"). The Parties agree the effects of the COVID-19 pandemic that is ongoing as of the Effective Date (including related government orders) may be invoked as a Force Majeure for the purposes of this Agreement even though the pandemic is ongoing and those effects may be reasonably foreseeable (but are not known for certain) as of the Effective Date. In addition, a Force Majeure may include reasonable measures affirmatively taken by a Party or its Affiliates to respond to any epidemic, pandemic, or spread of infectious disease (including the COVID-19 pandemic), or other Force Majeure event, such as requiring employees to stay home, closures of facilities, delays of Clinical Trials, or cessation of activities in response to an epidemic or other Force Majeure event. The affected Party will notify the other Party in writing of any Force Majeure circumstances that may affect its performance under this Agreement as soon as reasonably practical, will provide a good faith estimate of the period for which its failure or delay in performance under the Agreement is expected to continue based on currently available information, and will undertake reasonable efforts necessary to mitigate and overcome such Force Majeure circumstances and resume normal performance of its obligations hereunder as soon a reasonably practicable under the circumstances. If the Force Majeure circumstance continues, then, to the extent reasonably possible under the circumstances, the affected Party will update such written notice to the other Party on a [\*\*\*] basis, or more frequently if requested by the other Party, to provide updated summaries of its mitigation efforts and its estimates of when normal performance under the Agreement will be able to resume.
- 17.13. Independent Parties.** It is expressly agreed that Takeda and Arrowhead will be independent contractors and that, except as otherwise required by applicable Law, the relationship between Takeda and Arrowhead will not constitute a partnership (including for U.S. federal Tax purposes), joint venture, or agency. Takeda will not have the authority to make any statements, representations, or commitments of any kind, or to take any action, that will be binding on Arrowhead, without the prior written consent of Arrowhead, and Arrowhead will not have the authority to make any statements, representations, or commitments of any kind, or to take any action, that will be binding on Takeda, without the prior written consent of Takeda. The Parties (and any successor, assignee, transferee, or Affiliate of a Party) will not treat or report the relationship between the Parties arising under this Agreement as a partnership for United States tax purposes to the extent reasonably permitted based upon advice of the applicable Party's tax return preparer.
- 17.14. Further Assurances.** The Parties agree to reasonably cooperate with each other in connection with any actions required to be taken as part of their respective obligations under this Agreement, and will (a) furnish to each other such further information; (b) execute and deliver to each other such other documents; and (c) do such other acts and things (including working collaboratively to

correct any clerical, typographical, or other similar errors in this Agreement), all as the other Party may reasonably request for the purpose of carrying out the intent of this Agreement.

- 17.15. Performance by Affiliates.** Each Party acknowledges and accepts that the other Party may exercise its rights and perform its obligations (including granting or continuing licenses and other rights) under this Agreement either directly or through one or more of its Affiliates. A Party's Affiliates will have the benefit of all rights (including all licenses and other rights) of such Party under this Agreement. Accordingly, in this Agreement "Arrowhead" will be interpreted to mean "Arrowhead or its Affiliates" and "Takeda" will be interpreted to mean "Takeda or its Affiliates" where necessary to give each Party's Affiliates the benefit of the rights provided to such Party in this Agreement and the ability to perform its obligations (including granting or continuing licenses and other rights) under this Agreement; *provided, however*, that in any event each Party will remain responsible for the acts and omissions, including financial liabilities, of its Affiliates.
- 17.16. Binding Effect; No Third Party Beneficiaries.** As of the Effective Date, this Agreement will be binding upon and inure to the benefit of the Parties and their respective permitted successors and permitted assigns. Except as expressly set forth in this Agreement, no Person other than the Parties and their respective Affiliates and permitted assignees hereunder will be deemed an intended beneficiary hereunder or have any right to enforce any obligation of this Agreement.
- 17.17. Counterparts.** This Agreement may be executed in two or more counterparts, including by facsimile or PDF signature pages, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

*[THE REMAINDER OF THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK]*

IN WITNESS WHEREOF, the Parties have caused this Exclusive License Agreement to be executed by their duly authorized representatives as of the Execution Date.

**TAKEDA PHARMACEUTICALS U.S.A., INC.**

BY: /s/ Nenad Grmusa

NAME: Nenad Grmusa

TITLE: Head, Center for External Innovation

**ARROWHEAD PHARMACEUTICALS, INC.**

BY: /s/ Christopher Anzalone

NAME: Christopher Anzalone

TITLE: Chief Executive Officer



**FIRST AMENDMENT TO OFFICE LEASE**

This FIRST AMENDMENT TO OFFICE LEASE (“**First Amendment**”) is made and entered into on the 23<sup>rd</sup> day of October, 2020 (the “**Effective Date**”), by and between 177 COLORADO OWNER LLC, a Delaware limited liability company (“**Landlord**”), and ARROWHEAD PHARMACEUTICALS, INC., a Delaware corporation (“**Tenant**”).

**R E C I T A L S :**

A. Landlord and Tenant entered into that certain Office Lease dated as of April 17, 2019 (the “**Office Lease**”), as amended by that certain Notice of Lease Term Dates dated as of October 22, 2019 (the “**Commencement Memo**”, and together with the Office Lease, the “**Lease**”), pursuant to which Landlord leases to Tenant and Tenant leases from Landlord 24,434 RSF of space located on the seventh (7<sup>th</sup>) floor, commonly known as Suite 700 (the “**Existing Premises**”), in that certain building located at 177 E. Colorado Boulevard, Pasadena, California (the “**Building**”).

B. Landlord and Tenant desire to (i) expand the Existing Premises to include that certain space consisting of 24,434 RSF of space, commonly known as Suite 600, on the sixth (6<sup>th</sup>) floor of the Building (the “**Expansion Premises**”), as delineated on **Exhibit A** attached hereto and made a part hereof, and (ii) otherwise amend the Lease on the terms and conditions set forth in this First Amendment.

**A G R E E M E N T :**

NOW, THEREFORE, in consideration of the foregoing recitals and the mutual covenants contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. **Capitalized Terms.** As of the Effective Date, all of the references to the “**Lease**” in the Lease and this First Amendment shall mean the Lease as modified by this First Amendment; and all capitalized terms used herein shall have the same respective meanings as are given such terms in the Lease, unless expressly provided otherwise in this First Amendment.

2. **Modification of Premises.** Effective as of the date (the “**Expansion Commencement Date**”) that is the earlier to occur of (i) the date of Tenant's occupancy of the Expansion Premises for the conduct of business, (ii) the date of “Substantial Completion” of the “Tenant Improvements” (as those terms are defined in Sections 4.4 and 2.1, respectively, of the Tenant Work Letter attached hereto as **Exhibit B** (the “**Tenant Work Letter**”), and (iii) the date that is six (6) months following the “Possession Date” (as that term is defined in Section 5 below) [provided that the dates under clauses (ii) and (iii) above shall in no event be earlier than July 1, 2021, and such dates under clauses (ii) and (iii) above shall be subject to extension as set forth in Section 5.7 of the Tenant Work Letter], and continuing until the Lease Expiration Date (i.e., April 30, 2027, but subject to extension as set forth in Section 5.7 of the Tenant Work Letter), Tenant shall lease from Landlord and Landlord shall lease to Tenant the Expansion Premises. Consequently, effective upon the Expansion Commencement Date, the Existing Premises shall be increased to include the Expansion Premises. (The dates described in clauses (ii) and (iii) above are collectively referred to as the “**Dates Subject to Extension**.”) In the event that the Lease Expiration Date is extended pursuant to Section 5.7 of the Tenant Work Letter, then Tenant shall continue to pay Rent for the Existing Premises and the Expansion Premises in accordance with the terms of the Lease during such extended period of the Lease Term, and Base Rent shall be payable at the rate set forth in the Lease for the last month of the Lease Term for each of the Existing Premises and the Expansion Premises. The addition of the Expansion Premises to the Existing Premises shall, effective as of the Expansion Commencement Date, increase the size of the Premises to 48,868 RSF. The Existing Premises and the Expansion Premises shall, effective as of the Expansion Commencement Date, collectively be referred to as the “**Premises**”. Landlord and Tenant hereby

stipulate and agree that the rentable area of the Expansion Premises is as set forth in Recital Section B above. At any time during the “Expansion Term” (as that term is defined in Section 3.2 below), Landlord may deliver to Tenant a notice in the form as set forth in Exhibit C attached to the Office Lease, as a confirmation only of the information set forth therein, which, if accurate, Tenant shall execute and return to Landlord within five (5) days of receipt thereof. If Tenant fails to respond to such notice within such 5-day period, Landlord may send a written “reminder notice”. Tenant’s failure to respond to such reminder notice within three (3) business days following Tenant’s receipt thereof shall be deemed Tenant’s agreement that the information set forth in such notice is as specified therein. For the avoidance of any doubt, Tenant shall not be deemed to have failed to respond to, and shall not be bound by the information set forth in, a proposed confirmation of commencement for the Expansion Premises if Tenant shall timely notify Landlord, in writing, that Tenant disputes any or all of the information set forth therein...

3. **Base Rent.**

3.1 **Existing Premises.** Tenant shall continue to pay Base Rent for the Existing Premises in accordance with the terms of the Lease.

3.2 **Expansion Premises.** Commencing on the Expansion Commencement Date, and continuing through and including the Lease Expiration Date, Tenant shall pay to Landlord monthly installments of Base Rent for the Expansion Premises in accordance with the terms of the Lease, as set forth below. The period commencing on the Expansion Commencement Date and ending on the Lease Expiration Date is the “**Expansion Term**”.

Expansion Years***	Annual Base Rent	Monthly Installment of Base Rent	Monthly Base Rent Rate per RSF*
1◇	\$879,624.00**	\$73,302.00**	\$4.00
2	\$1,208,016.96	\$100,668.08	\$4.12
3	\$1,244,257.44	\$103,688.12	\$4.24
4	\$1,281,585.12	\$106,798.76	\$4.37
5	\$1,320,032.64	\$110,002.72	\$4.50
6 (until Lease Expiration Date)	\$1,359,633.60	\$113,302.80	\$4.64

\* The amounts identified in the column entitled “Monthly Base Rent Rate per RSF” are rounded amounts provided for informational purposes only.

\*\* Note that (i) Base Rent during the first Expansion Year has been calculated as if the Expansion Premises contained only 18,326 RSF. Such calculation shall not affect Tenant’s Share for the Expansion Premises or any other of Tenant’s obligations under the Lease.

\*\*\* For purposes of this First Amendment, “**Expansion Year**” shall mean each consecutive twelve (12) month period during the Expansion Term.

◇ Notwithstanding the foregoing Base Rent schedule or any contrary provision of the Lease, but subject to the terms of Section 3.3. below, Tenant shall not be obligated to pay the monthly installment of Base Rent for the Expansion Premises for the second (2<sup>nd</sup>) through seventh (7<sup>th</sup>) full calendar months of the Expansion Term.

On or prior to the Expansion Commencement Date, Tenant shall pay to Landlord the monthly installment of Base Rent payable for the Expansion Premises for the first full calendar month of the Expansion Term (in addition to any partial calendar month at the beginning of the Expansion Term).

3.3 **Abated Base Rent for Expansion Premises.** Provided that Tenant is not then in default of the Lease beyond all applicable notice and cure periods, then during the six (6) month period commencing on the first (1st) day of the second (2nd) full calendar month of the Expansion Term and continuing through and including the last day of the seventh (7th) full calendar month of the Expansion Term (the “**Base Rent Abatement Period**”), Tenant shall not be obligated to pay any Base Rent otherwise attributable to the Expansion Premises during such Base Rent Abatement Period (the “**Base Rent Abatement**”). Landlord and Tenant acknowledge that the aggregate amount of the Base Rent Abatement equals \$439,812.00 (i.e., \$73,302.00 per month). Tenant acknowledges and agrees that the foregoing Base Rent Abatement has been granted to Tenant as additional consideration for entering into this First Amendment, and for agreeing to pay the rent and performing the terms and conditions otherwise required under the Lease. If Tenant shall be in default under the Lease, and shall fail to cure such default within the notice and cure period, if any, permitted for cure pursuant to the terms and conditions of the Lease, or if the Lease is terminated for any reason other than Landlord's breach of the Lease, then the dollar amount of the unapplied portion of the Base Rent Abatement as of the date of such default or termination, as the case may be, shall be converted to a credit to be applied to the Base Rent applicable at the end of the Expansion Term and Tenant shall immediately be obligated to begin paying Base Rent for the Expansion Premises in full.

4. **Tenant's Share of Direct Expenses.**

4.1 **Existing Premises.** Tenant shall continue to be obligated to pay Tenant's Share of Direct Expenses in connection with the Existing Premises in accordance with the terms of the Lease.

4.2 **Expansion Premises.** Notwithstanding any contrary provision contained in the Lease, effective as of the Expansion Commencement Date, and continuing through and including the Lease Expiration Date, Tenant shall pay Tenant's Share of Direct Expenses in connection with the Expansion Premises which arise or accrue during such period in accordance with the terms of the Lease; provided that with respect to the calculation of Tenant's Share of Direct Expenses in connection with the Expansion Premises, the following shall apply: (i) Tenant's Share shall equal 7.84% of the Building, (ii) the Base Year shall be the calendar year 2021, (iii) Tenant shall have no obligation to pay Tenant's Share of Direct Expenses attributable to the first twelve (12) months of the Expansion Term, and (iv) Tenant shall receive Proposition 13 protection with respect to the Expansion Premises pursuant to Section 4.7 of the Office Lease, provided that (A) all references therein to the “Lease Term” shall be deemed to mean the “Expansion Term”, (B) all references therein to the “Base Year” shall mean calendar year 2021, which is the Base Year applicable to the Expansion Premises, (C) all references therein to “Lease Year” shall be deemed to mean “Expansion Year”, and (D) with respect to the Expansion Premises, Section 4.7.2 of the Office Lease shall be inapplicable, and the following shall be substituted therefor:

“4.7.2 **Protection.** With respect to the Expansion Premises, during the initial Extension Term Tenant shall not be obligated to pay the applicable ‘Percentage of Protection’ as set forth below, of the Tax Increase.

Expansion Year	Percentage of Protection
1	50%
2	25%
3    Lease Expiration Date	0%

As an example only, with respect to the Expansion Premises only, in the event of a Reassessment on the first day of the P1 Expansion Year Tenant would be responsible for 50% of the resulting Tax Increase in Expansion Year 1, 75% of the resulting Tax Increase in Expansion Year 2, and 100% of the resulting Tax Increase in Expansion Years 3 through the Lease Expiration Date.”

5. **Condition of Premises; Possession Date.** Tenant hereby acknowledges and agrees that, notwithstanding anything contained in the Lease and this First Amendment to the contrary, (a) Tenant has been and is in occupancy of the Existing Premises pursuant to the Lease as of the Effective Date, and is aware of the condition of the Existing Premises as of the Effective Date, and (b) Tenant shall continue to occupy the Existing Premises in their currently existing, “as is” condition following the Effective Date. Except as otherwise provided in the Tenant Work Letter, Landlord shall tender possession of the Expansion Premises to Tenant in its then existing, “as-is” condition, and Landlord shall not be obligated to provide or pay for any work or services related to the improvement of the Expansion Premises. Landlord shall be deemed to have tendered possession of the Expansion Premises to Tenant upon the date that Landlord provides Tenant with a key or access card to the Expansion Premises (the “**Possession Date**”), and no action by Tenant shall be required therefor. Tenant acknowledges that the Expansion Premises are currently occupied by an existing tenant. If for any reason Landlord is delayed in tendering possession of the Expansion Premises to Tenant by any particular date, Landlord shall not be subject to any liability for such failure, and the validity of this First Amendment shall not be impaired. Notwithstanding the foregoing or anything to the contrary contained herein, in the event that the Possession Date has not occurred by March 1, 2022 (the “**Outside Possession Date**”, which date shall be extended to the extent of any action or inaction by Tenant or any Tenant Parties which actually delays Landlord in performing its obligations under this Lease and are required to cause the Possession Date to occur), then Tenant shall be entitled to terminate Tenant's lease of the Expansion Premises (the “**Possession Delay Termination Right**”) by delivering written notice thereof to Landlord within ten (10) days after such Outside Possession Date, and in such event the termination of Tenant's lease of the Expansion Premises shall be effective immediately, and this First Amendment shall automatically be null and void, and of no further force or effect. In the event the Possession Date actually occurs before Landlord's receipt of a termination notice from Tenant, then such termination notice shall be deemed null and void, and Tenant's lease of the Expansion Premises shall continue in full force and effect. The Possession Delay Termination Right shall be Tenant's sole and exclusive remedy under the Lease, and at law and in equity, with respect to Landlord's failure to cause the Possession Date to occur by any particular date. Neither Landlord nor any agent of Landlord has made any representation or warranty regarding the condition of the Existing Premises, the Expansion Premises, the Building, or the Project as of the Effective Date or with respect to the suitability of the same for the conduct of Tenant's business.

6. **Right of First Offer.** Notwithstanding anything in the Lease to the contrary, the right of first offer with respect to the sixth (6<sup>th</sup>) floor of the Building set forth in Section 1.3 of the Office Lease is hereby deleted in its entirety and of no further force or effect. Instead, Landlord hereby grants to the Original Tenant and any Permitted Assignee an ongoing right of first offer with respect to any one (1) full floor of the Building (excluding the sixth (6) and seventh (7<sup>th</sup>) floors) (each such full floor, individually “**First Offer Space**” and collectively, the “**First Offer Spaces**”). Notwithstanding any provision to the contrary contained in this Section 6, such first offer right of Tenant shall commence only following the expiration or earlier termination of the existing leases (including renewals (and irrespective of whether any such renewal is pursuant to an express written provision in such tenant's lease or whether such renewal is effectuated by a lease amendment or a new lease)) of the applicable First Offer Space, if any, and such right of first offer shall be subordinate to all rights with respect to such First Offer Space which are set forth in leases of space in the Building as of the date hereof, including any expansion rights (including, but not limited to, must-take, rights of first offer, rights of first negotiation, rights of first refusal, expansion options and other similar rights), regardless of whether such rights are executed strictly in accordance with their terms, or pursuant to a lease amendment or a new lease (all such tenants under such leases are collectively referred to herein as the “**Superior Right Holders**”). Tenant's right of first offer shall be on the terms and conditions set forth in this Section 6, and Tenant shall not have any right of first offer, right of first refusal, or other expansion rights, except as set forth in this Section 6.

6.1 **Procedure for Offer.** Landlord shall notify Tenant in writing (the “**First Offer Notice**”) prior to leasing any such First Offer Space to a third party (other than a Superior Right Holder or a tenant under an existing lease). Pursuant to such First Offer Notice, Landlord shall offer to lease to Tenant the then available First Offer Space. A First Offer Notice shall describe the full floor(s) of space so offered to Tenant, the Base Rent, concessions, allowances and other economic terms, on a net effective basis based on the lease term for the First Offer Space as set forth in Section 6.4 below, upon which Landlord is willing to lease such space to Tenant and at which Landlord intends in good faith to market the First Offer Space to third-parties (the “**First Offer Rent**”). The rentable square footage of the space so offered to Tenant shall be as set forth in the First Offer Notice.

6.2 **Procedure for Acceptance.** If Tenant wishes to exercise Tenant's right of first offer with respect to the space described in the First Offer Notice, then within ten (10) business days of delivery of such First Offer Notice to Tenant, Tenant shall deliver notice to Landlord (the “**First Offer Exercise Notice**”) irrevocably exercising its right of first offer with respect to one (1) full floor of the Building as described in the First Offer Notice on the terms contained therein. If Tenant does not so notify Landlord within the ten (10) business day period, then Landlord shall be free to lease the space described in such First Offer Notice to anyone to whom Landlord desires on terms that are not “materially more favorable” (as defined below) than the terms set forth in the First Offer Notice. Notwithstanding anything to the contrary contained herein, Tenant must elect to exercise its right of first offer, if at all, with respect to one (1) entire full floor of the Building as offered by Landlord to Tenant at any particular time, and Tenant may not elect to lease only a portion thereof. If Tenant does not exercise its right of first offer with respect to any space described in a First Offer Notice or if Tenant fails to respond to a First Offer Notice within ten (10) business days of delivery thereof, then Tenant's right of first offer as set forth in this Section 6 shall terminate as to all of the space described in such First Offer Notice. If Landlord fails to enter into a lease with a third party for such First Offer Space within nine (9) months thereafter, or if Landlord wishes to enter into a lease on terms that are materially more favorable to the tenant than those set forth in the First Offer Notice, then Landlord shall again provide Tenant with a First Offer Notice and Tenant shall have the same rights with respect to such First Offer Notice as are provided in this Section 6. For the purposes hereof, “terms materially more favorable” shall mean terms that result in a change, on a net present value basis, of seven percent (7%) or more (using an eight percent (8%) discount rate) to the material economic terms set forth in Landlord's First Offer Notice.

6.3 **Construction In First Offer Space.** Except as otherwise provided in the First Offer Notice, Tenant shall accept the First Offer Space in its then existing “as is” condition and the construction of improvements in the First Offer Space shall comply with the terms of Article 8 of the Office Lease.

6.4 **Amendment to Lease.** If Tenant timely exercises Tenant's right to lease First Offer Space as set forth herein, then, within thirty (30) days thereafter, Landlord and Tenant shall execute a lease amendment (the “**First Offer Amendment**”) adding such First Offer Space to the Premises upon the terms and conditions as set forth in the First Offer Notice therefor and this Section 6, provided, however, that an otherwise valid exercise of the such right of first offer shall be fully effective whether or not the First Offer Amendment is executed. Tenant shall commence payment of Rent for such First Offer Space, and the lease term for such First Offer Space shall commence, upon the date that is the earlier to occur of (i) the date that is six (6) months after the date that Landlord provides Tenant with a key or access card to the First Offer Space (and no action by Tenant shall be required therefor), and (ii) the date upon which Tenant first commences to conduct business in the First Offer Space, and terminate on the date set forth in the First Offer Notice therefor (which date shall be no later than the Lease Expiration Date).

6.5 **Termination of Right of First Offer.** Tenant shall not have the right to lease First Offer Space, as provided in this Section 6, if, as of the date of the attempted exercise of the right of first offer by Tenant, as of the date Landlord and Tenant execute the First Offer Amendment, or as of the scheduled date of delivery of

such First Offer Space to Tenant, Tenant is in default under the Lease beyond all applicable notice and cure periods or Tenant has previously been in default beyond all applicable notice and cure periods under the Lease more than once (the (“**Option Conditions**”)); provided Landlord shall have the right to waive the Option Conditions in Landlord's sole discretion. The right of first offer granted herein shall terminate as to all First Offer Spaces and **thereafter** shall be of no further force or effect upon the earlier to occur of (i) Tenant's lease of any First Offer Space pursuant to the terms herein, and (ii) the date which is two (2) years prior to the Lease Expiration Date.

7. **Letter of Credit.** Landlord is currently in possession of Tenant's L-C in the amount of \$1,000,000.00 (the “**Existing L-C Amount**”). Notwithstanding any contrary provision of the Lease, the Existing L-C Amount is hereby increased by \$600,000.00 (the “**Expansion L-C Amount**”), so that the new L-C Amount under the Lease shall initially equal \$1,600,000.00. Tenant shall deliver to Landlord, on or prior to December 31, 2020, an amendment to the L-C increasing the amount of the L-C to the L-C Amount (i.e., \$1,600,000.00) in a form reasonably acceptable to Landlord. Further notwithstanding any contrary provision of the Lease, effective as of the Effective Date, the table in Section 21.3.2 of the Office Lease is hereby replaced with the following:

Date of Reduction	Amount of Reduction	Remaining L-C Amount
June 1, 2021	\$200,000.00	\$1,400,000.00
June 1, 2022	\$200,000.00	\$1,200,000.00
The day after the thirteenth (13 <sup>th</sup> ) full calendar month of the Expansion Term	\$200,000.00	\$1,000,000.00
June 1, 2023	\$300,000.00	\$700,000.00
The day after the twenty-fifth (25 <sup>th</sup> ) full calendar month of the Expansion Term	\$1 00,000.00	\$600,000.00
The day after the thirty-seventh (37 <sup>th</sup> ) full calendar month of the Expansion Term	\$100,000.00	\$500,000.00

8. **Parking.** Commencing as of the Expansion Commencement Date, Tenant shall have the use of up to seventy-five (75) additional unreserved parking passes, of which, up to five (5) unreserved parking passes may be converted to the use of an equal number of reserved parking passes subject to availability at such time, as reasonably determined by Landlord, all at the prevailing rate charged from time to time at the location of such parking passes. Such additional parking passes shall otherwise be subject to the terms of Article 28 of the Office Lease. In addition, Tenant shall be responsible for the full amount of any taxes imposed by any governmental authority in connection with the renting of such parking passes by Tenant or the use of the Parking Structure by Tenant.

9. **Signs.** In addition to the Tenant's Signage set forth in Section 23.5 of the Office Lease, during the Expansion Term Tenant shall be entitled to install, at Tenant's sole cost and expense, the following signage in connection with Tenant's lease of the Expansion Premises (collectively, the “**Tenant's Expansion Signage**”, and which shall constitute part of “Tenant's Signage” under the Lease): (i) the non-exclusive right to one (1) monument signage strip located on the Arroyo Parkway monument sign, the location of which is depicted in Exhibit C attached hereto, in the top position (the “**Expansion Monument Signage**”), and (ii) subject to the existing rights of third parties, the exclusive right to one (1) illuminated sign (the “**Expansion Building Top Signage**”) at the top of either the western or southern facing facade of the Building, as depicted in Exhibit D attached hereto), provided that Tenant shall be required to notify Landlord in writing of Tenant's election to install the Expansion Building Top Signage within thirty (30) days following Tenant's receipt of Landlord's notice

**(“Landlord's Building Top Sign Notice”)** that either or both of such facade locations is/are becoming available for installation of the Expansion Building Top Signage, which Landlord's Building Top Sign Notice shall include the anticipated date of availability for installation of the Expansion Building Top Signage, and if Landlord's Building Top Sign Notice specifies that both of such facade locations are becoming available then Tenant shall also specify in Tenant's election notice its choice of the facade (i.e., either the western or southern facing facade) for installation of the Expansion Building Top Signage. Landlord shall only be obligated to deliver Landlord's Building Top Sign Notice once for each of the facades for the Expansion Building Top Signage (i.e., one such notice for the western facing facade and one such notice for the southern facing facade ).

For illustration purposes only, if the western facing facade is the first of the two (2) facades to become available for installation of the Expansion Building Top Signage, then Landlord shall deliver Landlord's Building Top Sign Notice for the western facing facade, and if Tenant timely elects to install the Expansion Building Top Signage on the western facing facade then Tenant will not be entitled to any additional Landlord's Building Top Sign Notices thereafter. However, if Tenant fails to timely make such election, then at such time as the southern facing facade is becoming available, Landlord shall deliver Landlord's Building Top Sign Notice for the southern facing facade and Tenant shall have the right to elect to install the Expansion Building Top Signage on the southern facing facade, but Tenant will no longer have a right to elect to use the western facing facade regardless of whether the western facing facade is available or becoming available at such time, and if Tenant fails to timely elect to use the southern facing facade then Tenant shall have no further rights to Expansion Building Top Signage.

Notwithstanding any contrary provision of this Section 9, the exact position for the Expansion Building Top Signage on the applicable Building facade shall be designated by Landlord, in Landlord's reasonable discretion. Landlord hereby agrees that the Expansion Building Top Signage on the applicable Building facade shall be the only sign that Landlord will permit to be constructed on such applicable facade during the period that Tenant's right to Expansion Building Top Signage for the applicable Building facade is in effect. **Exhibit H** attached to the Office Lease shall be inapplicable to the Expansion Building Top Signage. Notwithstanding any contrary provision of Section 23.5.1 of the Office Lease, the Sign Specifications for the Expansion Building Top Signage shall be subject to the prior written approval of Landlord.

Except as expressly set forth in this Section 9, Tenant's Expansion Signage shall be subject to the terms of Section 23.5 of the Office Lease, as amended hereinbelow. Notwithstanding any provision to the contrary in the Lease, Tenant's rights to the respective Tenant's Expansion Signage shall terminate and be of no further force or effect (i) if Tenant fails to timely notify Landlord of the elections provided to Tenant under this Section 9, (ii) if Tenant fails to install Tenant's Expansion Monument Signage (as previously timely elected by Tenant) within six (6) months following the Expansion Commencement Date (subject to any documented delays caused by applicable governmental authorities in approving or granting permits for the applicable Tenant's Expansion Signage, provided that Tenant diligently and promptly applies for and pursues receipt of such governmental approvals and permits following the Effective Date), or (iii) if Tenant fails to install Tenant's Expansion Building Top Signage (as previously timely elected by Tenant) within the time period reasonably determined by Landlord at the time of Tenant's election therefor in order to ensure that the existing governmental permit for Building top signage on the applicable Building facade will not be jeopardized or subject to termination or expiration (subject to any documented delays caused by applicable governmental authorities in approving or granting permits for Tenant's Expansion Building Top Signage, provided that Tenant diligently and promptly applies for and pursues receipt of such governmental approvals and permits following the date of Tenant's election to install such signage). Additionally, Tenant's rights to Tenant's Expansion Signage shall terminate if the Original Tenant does not lease and occupy one hundred percent (100%) of the entire Premises (i.e., the Existing Premises and the Expansion Premises). In the event that the Original Tenant fails to lease and occupy the entire Expansion Premises, but the Original Tenant continues to lease and occupy the entire Existing Premises, then Tenant's Signage shall thereafter consist of only the Tenant's Signage set forth in Section 23.5 of the Office Lease and Tenant's Expansion Signage rights shall automatically terminate and be of no further force or effect.

In connection with the Expansion Building Top Signage, Tenant shall pay to Landlord a monthly signage fee, as Additional Rent, commencing on the date (the “**Signage Fee Commencement Date**”) that is the earlier to occur of (i) the date of Tenant's installation of the applicable Tenant's Expansion Building Top Signage, and (ii) the date that is ninety (90) days following the later to occur of (a) the date that the previous tenant with Building top signage in the applicable location removes its signage therefrom, and (b) the date of Tenant's receipt of Landlord's Building Top Sign Notice. The monthly signage fee shall thereafter be payable on or before the first (P1) day of each calendar month throughout the period of the Expansion Term during which Tenant continues to have the right to install and maintain such signage. The monthly signage fee shall be in the amount of \$2,500.00 per month if Tenant elects to install such Expansion Building Top Signage on the western facing facade or in the amount of \$7,500.00 per month if Tenant elects to install such Expansion Building Top Signage on the southern facing facade (each, the “**Signage Fee**”). If Tenant fails to timely pay the Signage Fee and such failure continues beyond any applicable notice and cure period under the Lease then Landlord shall have the right, at Landlord's election, to terminate Tenant's right to maintain the Expansion Building Top Signage.

Notwithstanding any contrary provision of this Section 9, Tenant's right to the Expansion Monument Signage shall continue for so long as the applicable monument sign continues to exist, Tenant hereby acknowledging that Landlord may remove such monument sign at any time in Landlord's sole discretion; provided that if Landlord thereafter installs a new Building monument sign or new comparable alternative signage of similar scope and scale, then Tenant's rights with respect to the Expansion Monument Signage shall be applicable to such new Building monument sign.

Tenant hereby acknowledges that, notwithstanding Landlord's approval of Tenant's Expansion Signage, Landlord has made no representation or warranty to Tenant with respect to the probability of obtaining all necessary governmental approvals and permits for Tenant's Expansion Signage. In the event Tenant does not receive the necessary governmental approvals and permits for Tenant's Expansion Signage, Tenant's and Landlord's rights and obligations under the remaining terms and conditions of the Lease shall be unaffected.

Notwithstanding any contrary provision of Section 23.1 of the Office Lease, the identification signage installed by Tenant in the Premises (i.e., in the Existing Premises and the Expansion Premises) at Landlord's cost shall be Building standard identification signage. Further notwithstanding any contrary provision of Section 23.4 of the Office Lease, at the present time there is no Building directory in the Building lobby. The fourth (4<sup>th</sup>) sentence of Section 23.5.4 of the Office Lease is hereby deleted and the following is substituted in its place: “. Upon the expiration or earlier termination of this Lease, or upon the termination of any of Tenant's Signage rights, Tenant shall, at Tenant's sole cost and expense, cause the applicable Tenant's Signage to be removed and shall cause the areas in which such Tenant's Signage was located to be restored to the condition existing immediately prior to the placement of such Tenant's Signage (excepting normal wear and tear and casualty).”



10. **Landlord Parties Definition.** Notwithstanding any contrary provision of Section 10.1 of the Office Lease, the term “Landlord Parties” shall mean Landlord, Landlord’s managing agent and their respective affiliates, partners, subpartners, members, directors, trustees officers, agents, servants, employees, independent contractors of Landlord and any mortgagee of Landlord.

11. **Brokers.** Landlord and Tenant hereby warrant to each other that they have had no dealings with any real estate broker or agent in connection with the negotiation of this First Amendment other than CBRE, representing Landlord, and Cresa, representing Tenant (collectively, the “**Brokers**”), and that they know of no other real estate broker or agent who is entitled to a commission in connection with this First Amendment other than the Brokers. Each party agrees to indemnify and defend the other party against and hold the other party harmless from any and all claims, demands, losses, liabilities, lawsuits, judgments, costs and expenses (including without limitation reasonable attorneys’ fees) with respect to any leasing commission or equivalent compensation alleged to be owing on account of any dealings with any real estate broker or agent other than the Brokers occurring by, through, or under the indemnifying party. The terms of this Section 11 shall survive the expiration or earlier termination of the Lease Term.

12. **CASp.** For purposes of Section 1938 of the California Civil Code, Landlord hereby discloses to Tenant, and Tenant hereby acknowledges, that the Expansion Premises have not undergone inspection by a Certified Access Specialists (CASp). As required by Section 1938(e) of the California Civil Code, Landlord hereby states as follows: “A Certified Access Specialist (CASp) can inspect the subject premises and determine whether the subject premises comply with all of the applicable construction-related accessibility standards under state law. Although state law does not require a CASp inspection of the subject premises, the commercial property owner or lessor may not prohibit the lessee or tenant from obtaining a CASp inspection of the subject premises for the occupancy or potential occupancy of the lessee or tenant, if requested by the lessee or tenant. The parties shall mutually agree on the arrangements for the time and manner of the CASp inspection, the payment of the fee for the CASp inspection, and the cost of making any repairs necessary to correct violations of construction-related accessibility standards within the premises.” In furtherance of the foregoing, Landlord and Tenant hereby agree as follows: (a) any CASp inspection requested by Tenant shall be conducted, at Tenant’s sole cost and expense, by a CASp designated by Landlord, subject to Landlord’s reasonable rules and requirements; (b) Tenant, at its sole cost and expense, shall be responsible for making any improvements or repairs within the Expansion Premises to correct violations of construction-related accessibility standards relating to the Tenant Improvements or any Alterations; and (c) if anything done by or for Tenant in its use or occupancy of the Expansion Premises shall require any improvements or repairs to the Building or Project (outside the Expansion Premises) to correct violations of construction-related accessibility standards, then Tenant shall reimburse Landlord upon demand, as Additional Rent, for the cost to Landlord of performing such improvements or repairs.

13. **Special Provision Relating to Bicycles.** Notwithstanding anything to the contrary in the Office Lease or this First Amendment, but subject to additional reasonable rules, regulations, and restrictions Landlord may make from time to time, Landlord shall permit up to ten (10) of Tenant’s designated employees to use the freight elevator of the Building to transport their bicycles between the lobby of the Building and the Premises. In no event shall Tenant or Tenant’s employees use the passenger elevators of the Building to transport any bicycles. Tenant shall promptly reimburse Landlord for the cost of any repairs necessitated due to any damage caused to the Building as a result of Tenant’s (or Tenant’s employees’) transporting of bicycles to and from the Premises and Tenant shall be responsible for any reasonable janitorial expenses incurred by Landlord as a result of Tenant’s or its employees’ bicycles being brought into the Building and the Premises, which expenses shall be payable by Tenant within thirty (30) days following Landlord’s billing thereof. Landlord shall have no liability for any damage to any bicycles or contents thereof, and the transportation and storage of any bicycles throughout the Building by Tenant or Tenant’s employees shall be at the sole risk of Tenant and Tenant’s employees.

14. **Counterparts.** This First Amendment may be executed in counterparts with the same effect as if both parties hereto had executed the same document. Both counterparts shall be construed together and shall constitute a single First Amendment.

15. **Signatures.** The parties hereto consent and agree that this First Amendment may be signed and/or transmitted by e-mail of a .pdf document or using electronic signature technology (e.g., via DocuSign or similar electronic signature technology), and that such signed electronic record shall be valid and as effective to bind the party so signing as a paper copy bearing such party's handwritten signature. The parties further consent and agree that (1) to the extent a party signs this First Amendment using electronic signature technology, by clicking "SIGN", such party is signing this First Amendment electronically, and (2) the electronic signatures appearing on this First Amendment shall be treated, for purposes of validity, enforceability and admissibility, the same as handwritten signatures.

16. **No Further Modification.** Except as specifically set forth in this First Amendment, all of the terms and provisions of the Lease shall remain unmodified and in full force and effect. In the event of any conflict between the terms and conditions of the Lease, and the terms and conditions of this First Amendment, the terms and conditions of this First Amendment shall prevail.

[signatures follow on next page]

IN WITNESS WHEREOF, Landlord and Tenant have caused this First Amendment to be executed the day and date first above written.

**“LANDLORD”**

177 COLORADO OWNER LLC,  
a Delaware limited liability company

By: /s/ Ron J. Hoyl

Name: Ron J. Hoyl

Its: Vice President

**“TENANT”**

ARROWHEAL PHARMACEUTICALS, INC,  
a Delaware corporation

By: /s/ Kenneth A Myszkwaki

Name: Kenneth A Myszkwaki

Its: CFO

By: \_\_\_\_\_

Name: \_\_\_\_\_

Its: \_\_\_\_\_

## SIXTH AMENDMENT TO LEASE AGREEMENT

This Sixth Amendment to Lease Agreement (this “**Amendment**”) is between University Research Park, Incorporated, a Wisconsin nonstock corporation (“**Landlord**”) and Arrowhead Madison Inc., a Delaware corporation (“**Tenant**”) and is dated as of November 23, 2020.

### RECITALS

A. Landlord and Tenant are parties to that certain Lease Agreement dated as of January 8, 2016, as amended by that certain First Amendment to Lease Agreement dated October 22, 2018, that certain Second Amendment to Lease Agreement dated January 10, 2019, that certain Third Amendment to Lease Agreement dated January 11, 2019, that certain Fourth Amendment to Lease Agreement dated September 19, 2019 and that certain Fifth Amendment to Lease Agreement dated as of May 14, 2020 (collectively, the “**Original Lease**”). The Original Lease and this Amendment are together referred to herein as the “Lease.”

B. Pursuant to the Original Lease, Tenant leases from Landlord approximately 63,662 rentable square feet located at 502 South Rosa Road, Madison, Wisconsin (the “**502 Building**”), an additional 2,971 rentable square feet in the 502 Building, approximately 7,558 rentable square feet located at 504 South Rosa Road, Madison, Wisconsin (the “**504 Building**”) and approximately 25,965 rentable square feet located at 500 South Rosa Road, Madison, Wisconsin (the “**500 Building**,” and together with the 502 Building and 504 Building, the “Buildings”), each as more particularly defined in the Original Lease (the “**Leased Premises**”).

C. Landlord and Tenant wish to amend the Lease to allow Tenant, to further expand the Leased Premises as more particularly set forth in this Amendment.

### AGREEMENTS

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Defined Terms.** Terms that are not defined in this Amendment (including the attached exhibits) but are defined in the Original Lease have the meanings given in the Original Lease.

2. **Amendment of Lease.** The Lease is hereby amended as follows:

a. **Fourth Expansion Premises.** Subject to the provisions of this Amendment, effective as of the date hereof, the Leased Premises shall be expanded to include the approximately 4,162 rentable square feet of ground floor space (the “**First Floor Space**”) plus approximately 2,372 rentable square feet of enclosed mechanical penthouse space (the “**Penthouse Space**”; together with the First Floor Space, the “**Fourth Expansion Premises**”) for a total of approximately 6,534 rentable square feet to be constructed by Tenant in the area generally depicted on Exhibit A. The Fourth Expansion Premises will be constructed by Tenant in accordance with the “Work Letter” set forth at Exhibit C as an addition to the 500 Building as generally depicted on Exhibit A attached hereto, and partially funded by the Landlord Contribution, as defined and more particularly described in Section 10 of the Work Letter.

b. **Base Rent.** The “**Fourth Expansion Rent Commencement Date**” shall be the date of Substantial Completion of the Fourth Expansion Premises (as defined in the Work Letter attached at Exhibit C), but no later than September 30, 2021, provided, however, such date shall be subject to extension for Landlord Delays and force majeure events as defined and more fully described in the Work Letter. Tenant shall begin paying Base Rent on the Fourth Expansion Premises on the Fourth Expansion Rent Commencement Date in the

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amounts set forth in a Base Rent matrix attached hereto as Exhibit B, together with all other amounts required by the Lease, as amended by this Amendment. For the avoidance of doubt, with respect to the Fourth Expansion Premises, the Base Rent amounts set forth in Exhibit B shall not be subject to adjustment regardless of the actual final square footage of the Fourth Expansion Premises.

c. **Tenant's Proportionate Share.** Commencing upon the Fourth Expansion Rent Commencement Date, Tenant's Proportionate Share shall be increased to reflect the addition of the rentable square footage of the Fourth Expansion Premises to the entire Leased Premises, currently estimated to be 71.48% based on the addition of an estimated 6,534 rentable square feet (106,690 rentable square feet of Leased Premises divided by 149,248 square feet in the Buildings within which the Leased Premises are located). Tenant shall thereafter in accordance with Section 2.2 of the Original Lease pay, as additional rent, Tenant's Proportionate Share of all amounts set forth in the Original Lease, including, without limitation, Real Estate Taxes, Common Area/Operating Expenses and Landlord's insurance and utilities based thereon. For the avoidance of doubt, Tenant's Proportionate Share shall be increased to include the actual rentable square footage of both the First Floor Space and Penthouse Space (as well as the remainder of the Leased Premises), to be confirmed by the mutual agreement of the parties and their advisors upon Substantial Completion.

d. **Fourth Expansion Premises Condition; Tenant Fourth Expansion Improvements.** Tenant acknowledges that the area in which the Fourth Expansion Premises will be constructed by Tenant is currently vacant land immediately adjacent to the 500 Building. Tenant accepts the Fourth Expansion Premises in as-is, where-is condition and acknowledges that Landlord has not made any representation or warranty related thereto, and Landlord shall not be required to construct, modify or otherwise improve the Fourth Expansion Premises in any manner (the foregoing, however, shall not be deemed to relieve Landlord of its ongoing maintenance, repair and replacement obligations to the extent explicitly set forth in the Lease or this Amendment; provided, however, that Landlord will have no such obligations related to the Tenant Fourth Expansion Improvements, defined below, prior to Substantial Completion, including the completion of any punchlist items by Tenant, as defined in the Work Letter or as otherwise set forth in Section 2.e. below). Promptly following the date hereof, Tenant shall in a diligent, good and workmanlike manner and in compliance with all applicable federal, state and local laws, rules, regulations and ordinances, finalize plans and specifications for and construct the Fourth Expansion Premises pursuant to the Work Letter (collectively, "**Tenant Fourth Expansion Improvements**" or "**Expansion Improvements**"). For the avoidance of doubt: (a) Tenant's obligations with respect to construction of the Expansion Improvements shall include all work to the 500 Building required to integrate the Expansion Improvements with the existing structure (including the removal of two facades in the course of construction) and the restoration of any surrounding land or improvements damaged or disturbed in connection with completing the Expansion Improvements; provided, however, nothing herein shall relieve Landlord from its maintenance, repair and replacement obligations with respect to the 500 Building pursuant to the Lease prior to Substantial Completion to the extent such obligations would have arisen independently of the Tenant Fourth Expansion Improvements or excuse Tenant for its failure to construct the Expansion Improvements in accordance with the Work Letter; and (b) except for the Landlord's Contribution, Tenant shall otherwise be responsible for all costs and additional work or Change Orders arising from the Tenant Fourth Expansion Improvements, including but not limited to, those arising from unforeseen conditions. Section 1.6 in the Original Lease shall not apply to construction of the Tenant Fourth Expansion Improvements, which shall be governed solely by this Amendment.

e. **Maintenance and Repair of Fourth Expansion Premises.** All applicable provisions of the Original Lease regarding the Parties' maintenance, repair and replacement obligations shall apply to the Fourth Expansion Premises including, but not limited to, Sections 3.1 and 3.2 of the Original Lease, as amended and restated in the Fifth Amendment to Lease Agreement, dated May 14, 2020 (the "Fifth Amendment"). Notwithstanding the foregoing, to the extent that Landlord would be responsible for any such maintenance, repairs

or replacements related to the Tenant Fourth Expansion Improvements: (i) Tenant shall first exhaust all of Tenant's remedies, at Tenant's expense, which may be available to Tenant in connection with such maintenance, repair and replacement, including, without limitation, pursuant to the Construction Contract and any manufacturer, supplier or subcontractor warranties or otherwise; (ii) notwithstanding any exclusion in the Original Lease for "costs of correcting defects in such original construction or renovation" or similar exclusion, Landlord may include the expenses actually incurred by Landlord related to the maintenance, repair and replacement of the Tenant Fourth Expansion Improvements pursuant to Section 3.2 of the Original Lease (as amended by the Fifth Amendment) in Common Area costs so long as such expenses are not otherwise expressly excluded from being included in Common Area costs by other provisions of the Lease; and (iii) the eighteen (18) month limitation regarding the exclusion of certain capital expenditures from Common Area costs as set forth in Section 2.f. of the Fifth Amendment shall not apply to the Tenant Fourth Expansion Improvements.

f. **Insurance of Fourth Expansion Premises.** Tenant shall be responsible for obtaining, or shall cause its general contractor to obtain, Builder's Risk Insurance with industry standard coverage during construction of the Tenant Fourth Expansion Improvements with commercially reasonable limits insuring the interests of both Landlord and Tenant. Following Substantial Completion (as defined in the Work Letter), Landlord shall be deemed to be the owner of the Tenant Fourth Expansion Improvements and shall thereafter add that portion of the Tenant Fourth Expansion Improvements, including the building structure and building systems (excluding only Tenant trade fixtures, furniture and equipment) to the property insurance policy maintained by Landlord pursuant to Section 6.1 of the Original Lease. Tenant shall provide to Landlord with its cost of construction of the Tenant Fourth Expansion Improvements, including reasonable supporting information, so that Landlord can adjust its insurance policy appropriately.

g. **Construction Liens.** Nothing contained herein shall imply any consent or agreement on the part of Landlord or any ground or underlying lessors or mortgagees having an interest in the Property to subject their respective estates or interests to liability under any mechanic's or other lien law and, to the extent a lien arises out of any work performed by or at the direction of Tenant, such lien shall be limited to Tenant's interest in this Lease. Nothing in this Section 2.g. shall be interpreted to limit Tenant's indemnity and other obligations set forth in Section 3.6 of the Original Lease provided, however, any indemnification or other obligations of Tenant related to claims for liens or liens filed shall be subject to, and Tenant shall not have responsibility for such claims to the extent arising from Landlord's default under the Lease as a result of its failure to make timely and full payment of the Landlord Contribution, or timely approval of payments for properly performed Work, as set forth in the Work Letter (and the schedules thereto).

h. **Utilities.** Tenant shall be responsible for the payment of all utilities supplied to the Fourth Expansion Premises beginning on the date hereof.

3. **502 Building Sidewalk Replacement.** In addition to the Landlord Contribution, Landlord will provide Tenant an allowance of up to \$26,325.00 to reimburse Tenant for the cost of paving the existing pedestrian sidewalk now adjacent to the Fourth Expansion Premises on the west side of South Rosa Road between Research Park Boulevard and the horse farm pursuant to plans that are mutually acceptable to the parties. Landlord may deposit such funds and disburse the same in the same manner as the Landlord Contribution.

4. **Effect.** Except as amended by this Amendment, all of the terms, covenants, conditions, provisions, and agreements of the Original Lease remain in full force and effect. The provisions of this Amendment supersede and control over any conflicting provisions in the Original Lease.

5. **Estoppel.** Tenant and Landlord hereby represent and warrant that, as of the date hereof (to the best of their actual knowledge with respect to items (b) and (c)), (a) the Lease is in full force and effect and has not been modified or amended, except as set forth herein, (b) neither Tenant nor Landlord is in default under the Lease nor does Tenant or Landlord have any knowledge of any event which with the giving of notice and passage of time would result in a default, and (c) Landlord and Tenant have performed all obligations on each of their respective parts under the Lease, and neither Party has any claims against the other Party, including any claims of offset against any rent or other sums payable by Tenant under the Lease.

6. **Miscellaneous.** This Amendment and the Lease embodies the entire agreement between the parties as to its subject matter and supersedes any prior discussions with respect thereto. There are no agreements or understandings between the parties with respect to the subject matter of this Amendment not set forth in this Amendment or the Lease. This Amendment cannot be modified except by a writing signed by both parties.

7. **Signing and Delivery.** This Amendment will be effective only when both Landlord and Tenant have signed and delivered it. Landlord's submission of an unsigned copy of this Amendment to Tenant for evaluation, negotiation, or signature by Tenant will not constitute signature of this Amendment by Landlord or otherwise bind Landlord, regardless of whether the cover letter or email transmitting that copy of this Amendment is signed or contains words of approval. This Amendment may be signed in counterparts and, when counterparts of this Amendment have been signed and delivered by the required parties as provided in this section, this Amendment will be fully binding and effective, just as if both of the parties had signed and delivered a single counterpart of this Amendment. Any counterpart transmitted by facsimile or email shall, in all cases, be deemed an original signature.

[Signature page follows]

IN WITNESS WHEREOF, this Sixth Amendment to Lease is signed by the parties as of the date set forth above.

**Landlord:**

UNIVERSITY RESEARCH PARK, INCORPORATED

By: /s/ Aaron olver

Aaron Olver, Assistant Secretary/Treasurer

**Tenant:**

ARROWHEAD MADISON INC.

By: /s/ Kenneth A. Myszkowski

Kenneth A. Myszkowski, CFO

The undersigned Guarantor consents to the terms of this Sixth Amendment to Lease Agreement and agrees that, except as limited by the First Amendment to Lease Agreement dated October 22, 2018 with respect to that portion of the guaranty related to the Note (as defined in the First Amendment), the Guaranty Agreement dated January 8, 2016 remains in full force and effect (and to the extent previously terminated, is hereby reinstated) with respect to the full, and prompt payment and performance of all obligations of Tenant under the Lease, including, without limitation, as amended pursuant to this Sixth Amendment to Lease Agreement.

ARROWHEAD PHARMACEUTICALS, INC.  
(f/k/a ARROWHEAD RESEARCH  
CORPORATION)

By: /s/ Kenneth A. Myszkowski

Kenneth A. Myszkowski, CFO



**EXHIBIT B**

**BASE RENT MATRIX**

	<b>Lease Period</b>	<b>Total Base Rent/Monthly Fourth Expansion Premises ("Notch")**</b>
	FERCD* – 9/30/21	\$7,543.63
	10/1/21 – 9/30/22	\$7,732.22
	10/1/22 – 9/30/23	\$7,925.52
	10/1/23 – 9/30/24	\$8,123.66
	10/1/24 – 9/30/25	\$8,326.75
	10/1/25 – 9/30/26	\$8,534.92
	10/1/26 – 9/30/27	\$8,748.29
	10/1/27 – 9/30/28	\$8,967.00
	10/1/28 – 9/30/29	\$9,191.17
	10/1/29 – 9/30/30	\$9,420.95
	10/1/30 – 9/30/31	\$9,656.48
Optional Extension # 1 (5 years)	10/1/31 – 9/30/32	\$9,897.89
	10/1/32 – 9/30/33	\$10,145.34
	10/1/33 – 9/30/34	\$10,398.97
	10/1/34 – 9/30/35	\$10,658.94
	10/1/35 – 9/30/36	\$10,925.42
Optional Extension # 2 (5 years)	10/1/36 – 9/30/37	\$11,198.55
	10/1/37 – 9/30/38	\$11,478.52
	10/1/38 – 9/30/39	\$11,765.48
	10/1/39 – 9/30/40	\$12,059.62
	10/1/40 – 9/30/41	\$12,361.11

\* FERCD = Fourth Expansion Rent Commencement Date.

\*\* Base Rent amount is fixed regardless of the final rentable square footage of the Fourth Expansion Premises, as approved in accordance with the Work Letter.

**EXHIBIT B**

## SEVENTH AMENDMENT TO LEASE AGREEMENT

This Seventh Amendment to Lease Agreement (this “**Amendment**”) is between University Research Park, Incorporated, a Wisconsin nonstock corporation (“**Landlord**”) and Arrowhead Madison Inc., a Delaware corporation (“**Tenant**”) and is dated as of December 9th, 2020.

## RECITALS

A. Landlord and Tenant are parties to that certain Lease Agreement dated as of January 8, 2016, as amended by that certain First Amendment to Lease Agreement dated October 22, 2018, that certain Second Amendment to Lease Agreement dated January 10, 2019, that certain Third Amendment to Lease Agreement dated January 11, 2019, that certain Fourth Amendment to Lease Agreement dated September 19, 2019, that certain Fifth Amendment to Lease Agreement dated as of May 14, 2020 and that certain Sixth Amendment to Lease Agreement dated as of November 23, 2020 (collectively, the “**Original Lease**”). The Original Lease and this Amendment are together referred to herein as the “**Lease**.”

B. Pursuant to the Original Lease, Tenant leases from Landlord approximately 63,662 rentable square feet located at 502 South Rosa Road, Madison, Wisconsin (the “**502 Building**”), an additional 2,971 rentable square feet in the 502 Building, approximately 7,558 rentable square feet located at 504 South Rosa Road, Madison, Wisconsin (the “**504 Building**”) and approximately 32,499 rentable square feet located at (or to be constructed as an addition to) 500 South Rosa Road, Madison, Wisconsin (the “**500 Building**,” and together with the 502 Building and 504 Building, the “**Buildings**”), each as more particularly defined in the Original Lease (the “**Leased Premises**”).

C. Landlord and Tenant wish to amend the Lease to further expand the Leased Premises to include Suite 201 in the 504 Building as more particularly set forth in this Amendment.

## AGREEMENTS

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Landlord and Tenant hereby agree as follows:

1. **Defined Terms.** Terms that are not defined in this Amendment (including the attached exhibits) but are defined in the Original Lease have the meanings given in the Original Lease.

2. **Amendment of Lease.** The Lease is hereby amended as follows:

a. **Fifth Expansion Premises.** Subject to the provisions of this Amendment, effective as of January 1, 2021 (the “**Effective Date**”), the Leased Premises shall be expanded to include the approximately 4,109 rentable square feet of space in the 504 Building commonly known as Suite 201 (the “**Fifth Expansion Premises**”) as generally depicted on Exhibit A. Subject to all of the terms and conditions of the Original Lease except for the payment of Rent, Landlord shall provide Tenant with early access to the Fifth Expansion Premises following the date in which such space is vacated by the existing tenant, anticipated to be approximately December 19, 2020. If Landlord is unable to deliver possession of the Fifth Expansion Premises to Tenant in accordance with the foregoing provisions, then Landlord shall not be in default hereunder or be liable for damages therefor and Tenant shall accept possession on the date when Landlord delivers possession thereof to Tenant (which date will then be the Effective Date). The term, with respect to the Fifth Expansion Premises only, shall expire on August 31, 2023 (for the avoidance of doubt, no options to renew shall be applicable to the Fifth Expansion Premises).

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b. **Base Rent.** Tenant shall begin paying Base Rent related to the Fifth Expansion Premises on the Effective Date in the amounts set forth in the Base Rent matrix attached hereto as Exhibit B, together with all other amounts required by the Lease, as amended by this Amendment.

c. **Tenant's Proportionate Share.** Commencing on the Effective Date, Tenant's Proportionate Share shall be increased to reflect the addition of the rentable square footage of the Fifth Expansion Premises to the entire Leased Premises, currently estimated to be 74.24% based on the addition of an estimated 4,109 rentable square feet (110,799 rentable square feet of Leased Premises divided by 149,248 square feet in the Buildings within which the Leased Premises are located). Tenant shall thereafter in accordance with Section 2.2 of the Original Lease pay, as additional rent, Tenant's Proportionate Share of all amounts set forth in the Original Lease, including, without limitation, Real Estate Taxes, Common Area/Operating Expenses and Landlord's insurance and utilities based thereon.

d. **Fifth Expansion Premises Condition.** Tenant accepts the Fifth Expansion Premises in as-is, where-is condition and acknowledges that Landlord has not made any representation or warranty related thereto, and Landlord shall not be required to construct, modify or otherwise improve the Fifth Expansion Premises in any manner (the foregoing, however, shall not be deemed to relieve Landlord of its ongoing maintenance, repair and replacement obligations to the extent explicitly set forth in the Lease or this Amendment).

e. **Maintenance and Repair of Fifth Expansion Premises.** All applicable provisions of the Original Lease regarding the Parties' maintenance, repair and replacement obligations shall apply to the Fifth Expansion Premises including, but not limited to, Sections 3.1 and 3.2 of the Original Lease, as amended and restated in the Fifth Amendment to Lease Agreement, dated May 14, 2020.

f. **Utilities.** Tenant shall be responsible for the payment of all utilities supplied to the Fifth Expansion Premises beginning on the date Tenant takes occupancy thereof.

g. **Access to Data Closet.** In addition to providing Landlord access to the Leased Premises as set forth in the Original Lease, Tenant shall permit access to the data closet identified on Exhibit A by Stemina Biomarker Discovery, Inc. ("Stemina") and its employees, agents, successor or assigns upon reasonable prior notice to Tenant (except in the event of an emergency no notice shall be required but Landlord or Stemina shall use reasonable efforts to contact Tenant by phone as soon as possible). Except in the event of an emergency, a representative of Landlord, the property manager or Tenant shall accompany Stemina (or its agents) upon any such entry to the Fifth Expansion Premises.

h. **Security Deposit.** On the date hereof, Tenant shall deposit an additional \$8,500 with Landlord bringing the total Security Deposit to \$207,683.62.

3. **Effect.** Except as amended by this Amendment, all of the terms, covenants, conditions, provisions, and agreements of the Original Lease remain in full force and effect. The provisions of this Amendment supersede and control over any conflicting provisions in the Original Lease.

4. **Estoppel.** Tenant and Landlord hereby represent and warrant that, as of the date hereof (to the best of their actual knowledge with respect to items (b) and (c)), (a) the Lease is in full force and effect and has not been modified or amended, except as set forth herein, (b) neither Tenant nor Landlord is in default under the Lease nor does Tenant or Landlord have any knowledge of any event which with the giving of notice and passage of time would result in a default, and (c) Landlord and Tenant have performed all obligations on each of their respective parts under the Lease, and neither Party has any claims against the other Party, including any claims of offset against any rent or other sums payable by Tenant under the Lease.

5. **Miscellaneous.** This Amendment and the Lease embodies the entire agreement between the parties as to its subject matter and supersedes any prior discussions with respect thereto. There are no agreements or understandings between the parties with respect to the subject matter of this Amendment not set forth in this Amendment or the Lease. This Amendment cannot be modified except by a writing signed by both parties.

6. **Signing and Delivery.** This Amendment will be effective only when both Landlord and Tenant have signed and delivered it. Landlord's submission of an unsigned copy of this Amendment to Tenant for evaluation, negotiation, or signature by Tenant will not constitute signature of this Amendment by Landlord or otherwise bind Landlord, regardless of whether the cover letter or email transmitting that copy of this Amendment is signed or contains words of approval. This Amendment may be signed in counterparts and, when counterparts of this Amendment have been signed and delivered by the required parties as provided in this section, this Amendment will be fully binding and effective, just as if both of the parties had signed and delivered a single counterpart of this Amendment. Any counterpart transmitted by facsimile or email shall, in all cases, be deemed an original signature.

7. **Contingency.** Landlord's obligations under this Amendment are conditioned and contingent upon Landlord, no later than December \_\_\_\_, 2020, entering into an early termination agreement with Elephas Bio Corporation ("Existing Tenant") to terminate Existing Tenant's lease of the Fifth Expansion Premises on terms acceptable to Landlord, in Landlord's sole discretion. In the event that Landlord is unable to enter into an acceptable termination agreement with Existing Tenant prior to the date set forth above, Landlord may unilaterally terminate this Amendment upon written notice to Tenant following which neither party shall have any further rights or obligations pursuant to this Amendment.

[Signature page follows]

IN WITNESS WHEREOF, this Seventh Amendment to Lease is signed by the parties as of the date set forth above.

**Landlord:**

UNIVERSITY RESEARCH PARK ,INCORPRATED

By:  /s/ Aaron Olver  
Aaron Olver, Assistant Secretary/Treasurer

**Tenant:**

ARROWHEAD MADISON INC.

By:  /s/ Kenneth A. Myszkowski  
Kenneth A. Myszkowski, CFO

The undersigned Guarantor consents to the terms of this Seventh Amendment to Lease Agreement and agrees that, except as limited by the First Amendment to Lease Agreement dated October 22, 2018 with respect to that portion of the guaranty related to the Note (as defined in the First Amendment), the Guaranty Agreement dated January 8, 2016 remains in full force and effect (and to the extent previously terminated, is hereby reinstated) with respect to the full, and prompt payment and performance of all obligations of Tenant under the Lease, including, without limitation, as amended pursuant to this Seventh Amendment to Lease Agreement.

ARROWHEAD PHARMACEUTICALS,INC.  
(f/k/a ARROWHEAD RESEARCH CORPORATION)

By:  /s/ Kenneth A. Myszkowski  
Kenneth A. Myszkowski, CFO

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**EXHIBIT B**

**BASE RENT MATRIX (FIFTH EXPANSION PREMISES ONLY)**

<b>Term</b>	<b>Monthly Amount</b>	<b>Annual Amount</b>
Effective Date – Aug. 31, 2021	\$ 5,821.08	N/A (partial year contemplated: \$ 46,568.64)
Sep. 1, 2021 – Aug. 31, 2022	\$ 5,968.32	\$ 71,619.84
Sep. 1, 2022 – Aug. 31, 2023	\$ 6,118.99	\$ 73,427.88

Monthly amount to be prorated on a daily basis if the Effective Date is other than the first day of a calendar month.

**EXHIBIT B**

## CERTIFICATION PURSUANT SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Christopher Anzalone, Chief Executive Officer of Arrowhead Pharmaceuticals, Inc., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arrowhead Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 4, 2021

/s/ CHRISTOPHER ANZALONE

**Christopher Anzalone**  
**Chief Executive Officer**

**CERTIFICATION PURSUANT SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Kenneth A. Myszkowski, Chief Financial Officer of Arrowhead Pharmaceuticals, Inc., certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Arrowhead Pharmaceuticals, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 4, 2021

/s/ Kenneth A. Myszkowski

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**Kenneth A. Myszkowski,**  
**Chief Financial Officer**



**CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Christopher Anzalone, Chief Executive Officer of Arrowhead Pharmaceuticals, Inc. (the “Company”), certify, pursuant to Rule 13(a)-14(b) or Rule 15(d)-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that (i) the Quarterly Report on Form 10-Q of the Company for the quarterly period ended December 31, 2020, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and (ii) the information contained in such Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of the Company.

Date: February 4, 2021

/s/ CHRISTOPHER ANZALONE

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**Christopher Anzalone**  
**Chief Executive Officer**

A signed original of these written statements required by 18 U.S.C. Section 1350 has been provided to Arrowhead Pharmaceuticals, Inc. and will be retained by Arrowhead Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

**CERTIFICATION PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

I, Kenneth A. Myszkowski, Chief Financial Officer of Arrowhead Pharmaceuticals, Inc. (the "Company"), certify, pursuant to Rule 13(a)-14(b) or Rule 15(d)-14(b) of the Securities Exchange Act of 1934 and 18 U.S.C. Section 1350, that (i) the Quarterly Report on Form 10-Q of the Company for the quarterly period ended December 31, 2020, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and (ii) the information contained in such Quarterly Report on Form 10-Q fairly presents in all material respects the financial condition and results of operations of the Company.

Date: February 4, 2021

/s/ Kenneth A. Myszkowski

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**Kenneth A. Myszkowski**  
**Chief Financial Officer**

A signed original of these written statements required by 18 U.S.C. Section 1350 has been provided to Arrowhead Pharmaceuticals, Inc. and will be retained by Arrowhead Pharmaceuticals, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.