

---

**SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**SCHEDULE 13G**

(Rule 13d-102)

**INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT  
TO § 240.13d-1(b), (c), AND (d) AND AMENDMENTS THERETO FILED  
PURSUANT TO § 240.13d-2(b)**

---

**Arrowhead Research Corporation**

(Name of Issuer)

---

**Common Stock**

(Title of Class of Securities)

---

**042797 10 0**

(CUSIP Number)

---

**October 21, 2011**

(Date of Event which Requires Filing of this Statement)

Check the appropriate box to designate the rule pursuant to which this Schedule is filed:

Rule 13d-1(b)

Rule 13d-1(c)

Rule 13d-1(d)

---

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)  Roche Holding Ltd	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP  NOT APPLICABLE	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION  Switzerland	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER  0
	6	SHARED VOTING POWER  9,017,021
	7	SOLE DISPOSITIVE POWER  0
	8	SHARED DISPOSITIVE POWER  9,017,021
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON  9,017,021	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES  NOT APPLICABLE	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)  8.6%	
12	TYPE OF REPORTING PERSON  CO	

(a) 0  
(b) 0

0

1	NAMES OF REPORTING PERSONS I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS (ENTITIES ONLY)	
	Roche Finance Ltd	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP	
	NOT APPLICABLE	
	(a) <input type="radio"/>	
	(b) <input type="radio"/>	
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION	
	Switzerland	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER
		0
	6	SHARED VOTING POWER
		9,017,021
	7	SOLE DISPOSITIVE POWER
		0
	8	SHARED DISPOSITIVE POWER
		9,017,021
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON	
	9,017,021	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES	
	NOT APPLICABLE	
	<input type="radio"/>	
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9)	
	8.6%	
12	TYPE OF REPORTING PERSON	
	CO	

**Item 1(a). Name of Issuer:**

Arrowhead Research Corporation

**Item 1(b). Address of Issuer's Principal Executive Offices:**

201 S. Lake Avenue, Suite 703  
Pasadena, California 91101

**Item 2(a). Name of Person Filing:**

Roche Holding Ltd and Roche Finance Ltd (the "Reporting Persons")

**Item 2(b). Address of Principal Business Office or, if None, Residence:**

Roche Holding Ltd : Grenzacherstrasse 124  
CH 4070, Basel, Switzerland

Roche Finance Ltd : Grenzacherstrasse 122  
CH 4058, Basel, Switzerland

**Item 2(c). Citizenship:**

Roche Holding Ltd is a company organized under the laws of Switzerland. Roche Finance Ltd is a company organized under the laws of Switzerland.

**Item 2(d). Title of Class of Securities:**

Common Shares, par value \$0.001 per share

**Item 2(e). CUSIP Number:**

042797 10 0

**Item 3. If this Statement is Filed Pursuant to §§240.13d-1(b), or 240.13d-2(b) or (c), Check Whether the Person Filing is a:**

Not Applicable

- (a)  Broker or dealer registered under Section 15 of the Act (15 U.S.C. 78o);
- (b)  Bank as defined in Section 3(a)(6) of the Act (15 U.S.C. 78c);
- (c)  Insurance company as defined in Section 3(a)(19) of the Act (15 U.S.C. 78c);
- (d)  Investment company registered under Section 8 of the Investment Company Act of 1940 (15 U.S.C. 80a-8);

- (e) o An investment adviser in accordance with §240.13d-1(b)(1)(ii)(E);
- (f) o An employee benefit plan or endowment fund in accordance with §240.13d-1(b)(1)(ii)(F);
- (g) o A parent holding company or control person in accordance with §240.13d-1(b)(1)(ii)(G);
- (h) o A savings association as defined in Section 3(b) of the Federal Deposit Insurance Act (12 U.S.C. 1813);
- (i) o A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3); A church plan that is excluded from the definition of an investment company under section 3(c)(14) of the Investment Company Act of 1940 (15 U.S.C. 80a-3);
- (j) o A non-U.S. institution in accordance with §240.13d-1(b)(1)(ii)(J);
- (k) o Group, in accordance with §240.13d-1(b)(1)(ii)(K).

If filing as a non-US institution in accordance with §240.13d-1(b)(1)(ii)(J), please specify the type of institution: \_\_\_\_\_

#### Item 4. Ownership.

Provide the following information regarding the aggregate number and percentage of the class of securities of issuer identified in Item 1.

- (a) Amount beneficially owned:

See item 9 on Cover Pages to this Schedule 13G.

Roche Holding Ltd may be deemed to have beneficial ownership of the 9,017,021 shares of the reported securities directly beneficially owned by Roche Finance Ltd, its wholly-owned subsidiary.

- (b) Percent of class:

See item 11 on Cover Pages to this Schedule 13G. Percent of class was determined using the number of shares outstanding of the Issuer as of October 21, 2011 as provided to the Reporting Persons by the Issuer on October 21, 2011.

- (c) Number of shares as to which such person has:

(i) Sole power to vote or to direct the vote: See item 5 on Cover Pages to this Schedule 13G.

(ii) Shared power to vote or to direct the vote: See item 6 on Cover Pages to this Schedule 13G.

(iii) Sole power to dispose or to direct the disposition of: See item 7 on Cover Pages to this Schedule 13G.

(iv) Shared power to dispose or to direct the disposition of: See item 8 on Cover Pages to this Schedule 13G.

#### Item 5. Ownership of Five Percent or Less of a Class.

Not Applicable

If this statement is being filed to report the fact that as of the date hereof the reporting person has ceased to be the beneficial owner of more than 5 percent of the class of securities, check the following [ ].

**Item 6. Ownership of More than Five Percent on Behalf of Another Person.**

Not Applicable

**Item 7. Identification and Classification of the Subsidiary Which Acquired the Security Being Reported on by the Parent Holding Company.**

Not Applicable

**Item 8. Identification and Classification of Members of the Group.**

Not Applicable

**Item 9. Notice of Dissolution of Group.**

Not Applicable

**Item 10. Certifications.**

By signing below I certify that, to the best of my knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

October 28, 2011  
(Date)

**ROCHE HOLDING LTD**

By: /s/ Dr. Beat Kraehenmann  
Name: Dr. Beat Kraehenmann  
Title: Authorized Signatory

By: /s/ Peter Eisenring  
Name: Peter Eisenring  
Title: Authorized Signatory

**ROCHE FINANCE LTD**

By: /s/ Peter Eisenring  
Name: Peter Eisenring  
Title: Authorized Signatory

By: /s/ Dr. Urs Jaisli  
Name: Dr. Urs Jaisli  
Title: Authorized Signatory