UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2017

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 001-36646

Asterias Biotherapeutics, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**46-1047971**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

6300 Dumbarton Circle
Fremont, California 94555
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code
(510) 456-3800

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 and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted 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 and post 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. (Check one):

Large accelerated filer	☐		Accelerated filer	☐
Non-accelerated filer	☒	(Do not check if a smaller reporting company)	Smaller reporting company	☐
Emerging growth company	☒			

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

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date: 54,151,142 shares of Series A Common Stock, $0.0001 par value, as of November 8, 2017.

PART I–FINANCIAL INFORMATION

Statements made in this Report that are not historical facts may constitute forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially from those discussed. Such risks and uncertainties include but are not limited to those discussed in this Report under Item 1 of the Notes to Financial Statements, and under Risk Factors in this Report. Words such as "expects," "may," "will," "anticipates," "intends," "plans," "believes," "seeks," "estimates," and similar expressions identify forward-looking statements.

References to "Asterias," "our" or "we" means Asterias Biotherapeutics, Inc.

The description or discussion, in this Form 10-Q, of any contract or agreement is a summary only and is qualified in all respects by reference to the full text of the applicable contract or agreement.

Item 1. Financial Statements

ASTERIAS BIOTHERAPEUTICS, INC.
CONDENSED BALANCE SHEETS
(IN THOUSANDS EXCEPT PAR VALUE AMOUNTS)

	September 30, 2017 (unaudited)	December 31, 2016 (Note 1)
ASSETS		
CURRENT ASSETS		
Cash and cash equivalents	$ 8,620	$ 19,800
Available-for-sale securities, at fair value	12,095	15,269
Prepaid expenses and other current assets	1,214	1,921
Total current assets	21,929	36,990
NONCURRENT ASSETS		
Intangible assets, net	16,116	18,130
Property, plant and equipment, net	4,760	5,475
Other assets	515	415
TOTAL ASSETS	$ 43,320	$ 61,010
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES		
Amount due to BioTime, Inc.	$ -	$ 288
Accounts payable	311	1,076
Accrued expenses	2,058	2,495
Capital lease liability, current	7	7
Deferred grant income	-	2,185
Total current liabilities	2,376	6,051
LONG-TERM LIABILITIES		
Warrant liability	5,262	8,665
Capital lease liability, noncurrent	16	20
Deferred rent liability	310	266
Lease liability	3,624	3,980
TOTAL LIABILITIES	11,588	18,982
Commitments and contingencies (see Note 9)		
STOCKHOLDERS' EQUITY		
Preferred Stock, $0.0001 par value, authorized 5,000 shares; none issued and outstanding	-	-
Common Stock, $0.0001 par value, authorized 75,000 Series A Common Stock and 75,000 Series B Common Stock; 49,950 and 47,467 shares Series A Common Stock issued and outstanding at September 30, 2017 and December 31, 2016, respectively; no Series B Common Stock issued and outstanding at September 30, 2017 and December 31, 2016	5	5
Additional paid-in capital	141,132	126,829
Accumulated other comprehensive loss	(3,853)	(1,078)
Accumulated deficit	(105,552)	(83,728)
Total stockholders' equity	31,732	42,028
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 43,320	$ 61,010

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

ASTERIAS BIOTHERAPEUTICS, INC.
CONDENSED STATEMENTS OF OPERATIONS
(IN THOUSANDS, EXCEPT PER SHARE DATA)
(UNAUDITED)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	**2016**	**2017**	**2016**
REVENUE				
Grant income	$ 1,526	$ 1,858	$ 3,711	$ 4,865
Royalties from product sales	162	218	303	337
Total revenue	1,688	2,076	4,014	5,202
Cost of sales	(81)	(59)	(151)	(118)
Gross profit	1,607	2,017	3,863	5,084
EXPENSES				
Research and development	(6,624)	(5,232)	(20,206)	(17,594)
General and administrative	(2,046)	(4,210)	(8,360)	(13,081)
Total operating expenses	(8,670)	(9,442)	(28,566)	(30,675)
Loss from operations	(7,063)	(7,425)	(24,703)	(25,591)
OTHER INCOME/(EXPENSE)				
Gain/(loss) from change in fair value on warrant liability	506	(3,995)	3,404	(2,368)
Interest expense, net	(112)	(128)	(351)	(413)
Other expense, net	(140)	(2)	(174)	(27)
Total other income (expense), net	254	(4,125)	2,879	(2,808)
LOSS BEFORE INCOME TAX BENEFIT	(6,809)	(11,550)	(21,824)	(28,399)
Deferred income tax benefit	-	902	-	2,255
NET LOSS	$ (6,809)	$ (10,648)	$ (21,824)	$ (26,144)
BASIC AND DILUTED NET LOSS PER SHARE	$ (0.14)	$ (0.24)	$ (0.44)	$ (0.63)
WEIGHTED AVERAGE SHARES OUTSTANDING: BASIC AND DILUTED	49,771	45,193	49,110	41,588

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

ASTERIAS BIOTHERAPEUTICS, INC.
CONDENSED STATEMENTS OF COMPREHENSIVE LOSS
(IN THOUSANDS)
(UNAUDITED)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2017	**2016**	**2017**	**2016**
NET LOSS	$ (6,809)	$ (10,648)	$ (21,824)	$ (26,144)
Other comprehensive loss:				
Unrealized (loss)/gain on available-for-sale securities	(764)	4,715	(2,892)	(782)
Realized loss on available-for-sale securities	118	-	118	-
Subtotal available-for-sale securities	(646)	4,715	(2,774)	(782)
COMPREHENSIVE LOSS	$ (7,455)	$ (5,933)	$ (24,598)	$ (26,926)

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

ASTERIAS BIOTHERAPEUTICS, INC.
CONDENSED STATEMENTS OF CASH FLOWS
(IN THOUSANDS)
(UNAUDITED)

	Nine Months Ended September 30,	
	2017	**2016**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (21,824)	$ (26,144)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization expense	840	909
Stock-based compensation	3,615	3,648
Amortization of intangible assets	2,014	2,014
Deferred income tax benefit	-	(2,255)
Common stock issued for services in lieu of cash	858	644
Gain (loss) from change in fair value of warrant liability	(3,404)	2,368
Distribution of Asterias warrants to shareholders other than BioTime, Inc.	2,042	5,285
Loss on sale of available-for-sale securities	118	-
Loss on disposal of fixed assets	112	-
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	13	(955)
Other assets	595	8
Accounts payable	(765)	(107)
Accrued expenses and other current liabilities	(725)	625
Deferred rent liability	44	73
Lease liability	-	166
Deferred grant income	(2,185)	(1,121)
Amount due to BioTime, Inc.	-	(233)
Net cash used in operating activities	(18,652)	(15,075)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchase of property, plant and equipment	(237)	(643)
Proceeds from the sale of available-for-sale securities	281	-
Reimbursement of security deposit	-	31
Net cash provided by/(used in) investing activities	44	(612)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from sale of common stock and warrants	5	20,199
Financing costs for sale of common stock and warrants	-	(1,895)
Proceeds from sale of common shares under at-the-market transactions	8,003	2,149
Financing costs for at-the-market sales	(238)	(74)
Proceeds from exercise of stock options	18	1,933
Repayment of lease liability and capital lease obligation	(360)	(315)
Shares retired to pay for employees' taxes	-	(134)
Reimbursement from landlord on construction in progress	-	567
Net cash provided by financing activities	7,428	22,430
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	(11,180)	6,743
CASH AND CASH EQUIVALENTS:		
At beginning of period	19,800	11,183
At end of period	$ 8,620	$ 17,926

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

ASTERIAS BIOTHERAPEUTICS, INC.
NOTES TO CONDENSED FINANCIAL STATEMENTS
(UNAUDITED)

1. Organization, Basis of Presentation and Liquidity

Asterias Biotherapeutics, Inc. ("Asterias") is a biotechnology company focused on the emerging fields of regenerative medicine and cancer immunotherapy. Asterias has two core technology platforms. The first is a type of stem cell capable of becoming all of the cell types in the human body, a property called pluripotency. The second is a type of cell called "dendritic cells" used to teach cancer patients' immune systems to attack their tumors. Asterias currently has three clinical stage programs based on these platforms: AST-OPC1 is a therapy derived from pluripotent stem cells that is currently in a Phase 1/2a clinical trial for spinal cord injuries; AST-VAC1 is a patient-specific cancer immunotherapy for Acute Myeloid Leukemia (AML); and AST-VAC2 is a non-patient specific cancer immunotherapy for which our research partner Cancer Research UK is planning for the initiation of a Phase 1 clinical trial in non-small cell lung cancer. Asterias was incorporated in Delaware on September 24, 2012.

The accompanying unaudited condensed financial statements have been prepared in accordance with accounting principles generally accepted in the United States ("GAAP") for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X of the Securities Exchange Commission. In accordance with those rules and regulations certain information and footnote disclosures normally included in comprehensive financial statements have been condensed or omitted pursuant to such rules and regulations. The balance sheet as of December 31, 2016 was derived from the audited financial statements at that date, but does not include all the information and footnotes required by GAAP. These financial statements should be read in conjunction with the audited financial statements and notes thereto included in Asterias' Annual Report on Form 10-K for the year ended December 31, 2016.

The accompanying interim condensed financial statements, in the opinion of management, include all adjustments, consisting only of normal recurring adjustments, necessary for a fair presentation of Asterias' financial condition and results of operations. The condensed results of operations are not necessarily indicative of the results to be expected for any future interim period or for the entire year.

Liquidity – Since inception, Asterias has incurred operating losses and has funded its operations primarily through issuance of equity securities, warrants, payments from research grants, and royalties from product sales. On October 18, 2017, Asterias completed a registered offering of its Series A common stock, pursuant to which it raised $10.4 million in gross proceeds (see Note 14). At September 30, 2017, Asterias had an accumulated deficit of $105.6 million, working capital of $19.6 million and stockholders' equity of $31.7 million. Asterias has evaluated its projected cash flows and believes that its cash and cash equivalents of $8.6 million and available-for-sale securities of $12.1 million as of September 30, 2017, as supplemented by the $10.4 million in gross proceeds from the recent offering, will be sufficient to fund Asterias' operations through at least twelve months from the issuance date of these financial statements. If the value of Asterias' available-for-sale securities decreases or it is unable to obtain adequate future financing for its clinical trials, it may be required to delay, postpone, or cancel its clinical trials, limit the number of clinical trial sites, or otherwise reduce or curtail its operations. Future financings may not be available to Asterias at acceptable terms, or at all. Sales of additional equity securities would result in the dilution of interests of current shareholders.

2. Summary of Significant Accounting Policies

Basic and diluted net loss per share – The computations of basic and diluted net loss per share are as follows (in thousands, except per share data):

	Three Months Ended September 30, (Unaudited)		Nine Months Ended September 30, (Unaudited)	
	2017	2016	2017	2016
Net loss	$ (6,809)	$ (10,648)	$ (21,824)	$ (26,144)
Weighted average common shares outstanding – basic and diluted	49,771	45,193	49,110	41,588
Net loss per share – basic and diluted	$ (0.14)	$ (0.24)	$ (0.44)	$ (0.63)

The following common stock equivalents were excluded from the computation of diluted net loss per share of common stock for the periods presented because including them would have been anti-dilutive (in thousands):

	Three Months Ended September 30, (Unaudited)		Nine Months Ended September 30, (Unaudited)	
	2017	2016	2017	2016
Stock options and restricted stock units	7,272	6,349	7,272	6,349
Warrants	2,813	6,699	2,813	6,699

Recent Accounting Pronouncements

In March 2016, the FASB issued ASU 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting ("ASU 2016-09")*, which simplifies several aspects of the accounting for share-based payment transactions, including the income tax consequences, forfeitures, classification of awards as either equity or liabilities, and classification on the statement of cash flows. Asterias adopted ASU 2016-09 beginning on January 1, 2017.

In connection with the adoption of ASU 2016-09, Asterias changed how it accounts for excess tax benefits and deficiencies, if any, and forfeitures, as applicable. All excess tax benefits and tax deficiencies from stock-based compensation awards accounted for under ASC 718 are recognized as an income tax benefit or expense, respectively, in the statements of operations. Prior to the adoption of ASU 2016-09, Asterias recognized excess tax benefits, if any, in additional paid-in capital only if the tax deduction reduced cash income taxes payable and excess tax deficiencies were recognized either as an offset to accumulated excess tax benefits, if any, on Asterias' statements of operations. An excess income tax benefit arises when the tax deduction of a share-based award for income tax purposes exceeds the compensation cost recognized for financial reporting purposes and, a tax deficiency arises when the compensation cost exceeds the tax deduction. Because Asterias has a full valuation allowance, there was no impact to Asterias' statements of operations for any excess tax benefits or deficiencies, as any excess benefit or deficiency would be offset by the change in the valuation allowance (see Note 11).

Forfeitures are now accounted for as they occur instead of based on the number of awards that were expected to vest. Based on the nature and timing of Asterias equity grants, straight-line expense attribution of stock-based compensation for the entire award and the relatively low forfeiture rate on Asterias experience, the impact of adoption of ASU 2016-09 pertaining to forfeitures was not significant to Asterias' financial statements (see Note 8).

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*, which requires an entity to recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. In doing so, companies will need to use more judgment and make more estimates than under today's guidance. These may include identifying performance obligations in the contract, estimating the amount of variable consideration to include in the transaction price and allocating the transaction price to each separate performance obligation. The ASU will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. In August 2015, the FASB issued ASU No. 2015-14, *Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date*, which provided for the adoption of the new standard for fiscal years beginning after December 15, 2017. Accordingly, ASU No. 2014-09 is effective for the Company in the first quarter of 2018. Upon adoption, ASU No. 2014-09 can be applied retrospectively to all periods presented or only to the most current period presented with the cumulative effect of changes reflected in the opening balance of retained earnings in the most current period presented. The FASB has also issued the following standards which clarify ASU No. 2014-09 and have the same effective date as the original standard:

- ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606): Principal versus Agent Considerations (Reporting Revenue Gross versus Net)*;
- ASU No. 2016-10, *Identifying Performance Obligations and Licensing (Topic 606);*
- ASU No. 2016-11, *Revenue Recognition (Topic 605) and Derivatives and Hedging (Topic 815): Rescission of SEC Guidance Because of Accounting Standards Updates 2014-09 and 2014-16 Pursuant to Staff Announcements at the March 3, 2016, EITF Meeting;*
- ASU No. 2016-12, *Revenue from Contracts with Customers (Topic 606): Narrow-Scope Improvements and Practical Expedients; and*
- ASU No. 2016-20, *Revenue from Contracts with Customers (Topic 606): Technical Corrections and Improvements.*

The Company expects to adopt ASU 2014-09 effective January 1, 2018, using the modified retrospective transition method. The Company has performed an initial analysis of areas that will be impacted by the new guidance and is currently evaluating the effect that the new standard will have on its internal processes, financial statements, and related disclosures.

While the Company continues to assess all potential impacts under ASU 2014-09, recognition of the Company's revenue under the new standard is expected to be materially consistent with the Company's current revenue recognition policy. The new standard is not expected to materially impact the timing or amounts of revenue recognized.

In May 2017, the FASB issued ASU 2017-09, *Compensation – Stock Compensation: Scope of Modification Accounting* to clarify the scope of modification accounting for share-based compensation. Under the new guidance, modification accounting is required only if the fair value, the vesting conditions, or the classification of the award (as equity or liability) changes as a result of the change in terms or conditions. The new guidance will reduce diversity in practice and result in fewer changes to the terms of an award being accounted for as modifications. The new authoritative guidance will be effective for public business entities in fiscal years beginning after December 15, 2017. The authoritative guidance will be effective for the Company beginning in fiscal year 2018 as the Company decided not to early adopt it in fiscal year 2018. The Company is currently evaluating the impact of this new authoritative guidance on its financial statements.

3. Balance Sheet Components

Property, plant and equipment, net

As of September 30, 2017 and December 31, 2016, property, plant and equipment consisted of the following (in thousands):

	September 30, 2017 (Unaudited)	December 31, 2016
Furniture, fixtures and leasehold improvements	$ 5,274	$ 5,421
Computers, machinery and equipment	2,060	2,545
	7,334	7,966
Less - accumulated depreciation and amortization	(2,574)	(2,491)
Property, plant and equipment, net	$ 4,760	$ 5,475

Depreciation expense for the three and nine months ended September 30, 2017 was $285,000 and $840,000, respectively. Depreciation expense for the three and nine months ended September 30, 2016 was $304,000 and $909,000, respectively.

During the quarter ended September 30, 2017, the Company performed a periodic review of its fixed assets and identified certain fixed assets that were no longer in use or impaired. As of September 30, 2017 the Company disposed of $112,000 in fixed assets (net of accumulated depreciation of $757,000). For the nine months ended September 30, 2017, the Company recognized non-cash impairment losses of $98,000 and $14,000, respectively, which are included in research and development and general and administrative expense in the condensed statements of operations.

4. Investments in BioTime and OncoCyte

Investment in BioTime

BioTime common shares are included in current assets in Asterias' balance sheet as available-for-sale securities recorded at fair value as the shares are traded on NYSE American (symbol "BTX") and available for working capital purposes. During the quarter and nine months ended September 30, 2017, Asterias sold 106,331 of its BTX shares at a weighted-average price of $2.81. As of September 30, 2017 and December 31, 2016, Asterias held 3,746,549 and 3,852,880 of BioTime shares, respectively, which were valued at $10.6 million and $13.9 million, respectively based on the closing price on those respective dates.

Investment in OncoCyte

On December 31, 2015, in connection with BioTime's distribution of OncoCyte common stock to BioTime shareholders, on a pro rata basis, Asterias received 192,644 shares of OncoCyte common stock from BioTime as a dividend in kind. On that date, BioTime shareholders, including Asterias, received one share of OncoCyte common stock for every twenty shares of BioTime common stock held. Asterias recorded the fair value of the OncoCyte common stock as contributed capital from BioTime.

The OncoCyte shares are included in current assets in Asterias' balance sheet as available-for-sale securities recorded at fair value as the shares are traded on NYSE American (symbol "OCX") and available for working capital purposes. As of September 30, 2017 and December 31, 2016, the OncoCyte shares were valued at $1.5 million and $1.4 million based on the OncoCyte closing prices on those respective dates.

5. Cross-License and Share Transfer with BioTime and Subsidiaries

On February 16, 2016, Asterias entered into a Cross-License Agreement (the "Cross-License") with BioTime and BioTime's wholly owned subsidiary ES Cell International Pte Ltd ("ESI"). Under the terms of the Cross-License, Asterias received a fully-paid, non-royalty-bearing, world-wide, non-exclusive, sub-licensable license under certain BioTime patents and related patent rights and ESI patents and related patent rights specified in the Cross-License, for all purposes in the Asterias Licensed Field, as defined in the Cross-License agreement, during the term of the license.

Under the terms of the Cross-License, BioTime and ESI received a fully-paid, non-royalty-bearing, world-wide, non-exclusive, sub-licensable license in, to, and under the certain Asterias patents and related patent rights for all purposes in the BioTime/ESI Licensed Field, as defined in the Cross-License agreement, during the term of the license.

On February 16, 2016, Asterias also entered into a Share Transfer Agreement ("Share Transfer") with BioTime and ESI pursuant to which (a) Asterias transferred to BioTime 2,100,000 shares of common stock of OrthoCyte Corporation ("OrthoCyte) and 21,925 ordinary shares of Cell Cure Neurosciences Ltd ("Cell Cure"), each a majority-owned subsidiary of BioTime, with an aggregate carrying value at the time of the transaction of approximately $416,000 and (b) BioTime transferred to Asterias 75,771 shares of Series A Common Stock of Asterias with a carrying value at the time of the transaction of approximately $197,000 and warrants to purchase 3,150,000 Series A common stock of Asterias at an exercise price of $5.00 per share, with a carrying value at the time of the transaction of approximately $2.0 million, as additional consideration for the license of patents and patent rights from Asterias under the Cross License. On March 20, 2016, the warrants to purchase 3,150,000 shares of Series A common stock were retired by Asterias.

The Cross-License and Share Transfer transaction was accounted for as a transfer of assets between entities under common control and recorded at carrying value, with the resulting gain on transfer of approximately $1.8 million recorded by Asterias in equity as contributed capital from BioTime in accordance with, and pursuant to ASC 805-50, *Transactions Between Entities Under Common Control*. The transfer of assets was also a taxable transaction to Asterias generating a taxable gain of approximately $3.1 million as further discussed in Note 11.

6. Intangible Assets

Intangible assets net of accumulated amortization at September 30, 2017 and December 31, 2016 are shown in the following table (in thousands):

	September 30, 2017 (Unaudited)	December 31, 2016
Intangible assets	$ 26,860	$ 26,860
Less- accumulated amortization	(10,744)	(8,730)
Intangible assets, net	$ 16,116	$ 18,130

Asterias recognized $672,000 and $2.0 million in amortization expense of intangible assets during the three and nine months ended September 30, 2017 and 2016, respectively.

7. Common Stock and Warrants

As of September 30, 2017 and December 31, 2016, Asterias had outstanding 49,949,587 and 47,466,596 Series A Shares and no Series B Shares, respectively.

Common Stock Issuance

On March 28, 2017, Asterias entered into an amendment to its at-the-market (ATM) Sales Agreement, dated April 10, 2015, with MLV. The amendment to the Sales Agreement was entered into by Asterias, MLV and FBR Capital Markets & Co. ("FBR" and together with MLV, the "Agents"), which acquired MLV. Under the Sales Agreement, as amended, Asterias may issue and sell shares of its Series A common stock having an aggregate offering price of up to $25 million from time to time on or after March 28, 2017, through the Agents, subject to certain limitations, including the number of shares registered and available under the Company's previously filed and currently effective shelf registration statement on Form S-3 (File No. 333-215154) (the "Registration Statement"). For the nine months ended September 30, 2017, Asterias has sold approximately 2.0 million shares of Series A common stock for gross proceeds of $8.0 million. For the nine months ended September 30, 2016, Asterias sold 509,897 shares of Series A common stock for gross proceeds of approximately $2.1 million.

For the nine months ended September 30, 2017 and 2016, pursuant to a services agreement with Cell Therapy Catapult Services Limited, Asterias issued 217,193 and 142,020 shares of Asterias Series A common stock with a fair value of $858,000 and $644,000 respectively (see Note 12).

Warrants classified as a liability

On May 13, 2016, as part of the Asterias Series A Common Stock Offering, Asterias issued 2,959,559 warrants (the "Asterias Offering Warrants"). The Asterias Offering Warrants have an exercise price of $4.37 per share and expire in five years of the issuance date, or May 13, 2021. The Asterias Offering Warrants also contain certain provisions in the event of a Fundamental Transaction, as defined in the warrant agreement governing the Asterias Offering Warrants ("Warrant Agreement"), that Asterias or any successor entity will be required to purchase, at a holder's option, exercisable at any time concurrently with or within thirty days after the consummation of the fundamental transaction, the Asterias Offering Warrants for cash. This cash settlement will be in an amount equal to the value of the unexercised portion of such holder's warrants, determined in accordance with the Black-Scholes option pricing model as specified in the Warrant Agreement.

In accordance with ASC 815-40, *Accounting for Derivative Financial Instruments Indexed to, and Potentially Settled in, a Company's Own Stock*, contracts that require or may require the issuer to settle the contract for cash are liabilities recorded at fair value, irrespective of the likelihood of the transaction occurring that triggers the net cash settlement feature. Changes to the fair value of those liabilities are recorded in the statements of operations. Accordingly, since Asterias may be required to net cash settle the Asterias Offering Warrants in the event of a Fundamental Transaction; the Asterias Offering Warrants are classified as noncurrent liabilities at fair value, with changes in fair value recorded in other income or expense, net, in the statements of operations.

The fair value of the Asterias Offering Warrants at the time of issuance was determined by using a combination of the Binomial Lattice and Black-Scholes option pricing models under various probability-weighted outcomes which take into consideration the probability of the fundamental transaction and net cash settlement occurring, using the contractual term of the warrants. In applying these models, the fair value is determined by applying Level 3 inputs, as defined by ASC 820; these inputs have included assumptions around the estimated future stock price of Asterias common stock, volatility and the timing of, and varying probabilities that certain events will occur. The Asterias Offering Warrants are revalued each reporting period using the same methodology described above. Changes in any of the key assumptions used to value the Asterias Offering Warrants could materially impact the fair value of the warrants and Asterias' financial statements.

At September 30, 2017, based on a valuation performed on the Asterias Offering Warrants using the methodology described above, the fair value of the Asterias Offering Warrants liability was $5.3 million, resulting in Asterias recording an unrealized gain of $0.5 million and $3.4 million for the three and nine months ended September 30, 2017, respectively included in other income and expenses, net, in the statements of operations.

Warrants classified as equity

On March 30, 2016, Asterias' board of directors declared a distribution of Asterias common stock purchase warrants to all Asterias shareholders other than BioTime, in the ratio of one warrant for every five shares of Asterias common stock owned of record as of the close of business on April 11, 2016. On April 25, 2016, Asterias distributed 3,331,229 warrants (the "Distribution Warrants"). The distribution of the Distribution Warrants was treated as a disproportionate distribution since, in accordance with the terms of the Share Transfer with BioTime, no warrants were distributed to BioTime. The Distribution Warrants are classified as equity, have an exercise price of $5.00 per share, and were set to expire on September 30, 2016. Asterias recorded the Distribution Warrants at a fair value of approximately $3.1 million with a non-cash charge to shareholder expense included in general and administrative expenses and a corresponding increase to equity as of March 30, 2016 as the Distribution Warrants were deemed to be issued for accounting purposes on that date.

On September 19, 2016, Asterias extended the expiration date of the Distribution Warrants to February 15, 2017, no other terms were changed. As a result of the extension of the expiration date of these warrants, Asterias recorded a $2.0 million non-cash charge to shareholder expense included in general and administrative expenses and a corresponding increase to equity for the year ended December 31, 2016. On February 3, 2017, Asterias extended the expiration date of the Distribution Warrants to September 29, 2017. As a result of this extension, Asterias recorded a $1.7 million non-cash charge to shareholder expense included in general and administrative expenses and a corresponding increase to equity for the quarter ended March 31, 2017. On September 29, 2017, the unexercised Distribution Warrants that would have otherwise resulted in the issuance of 3,328,033 shares of Asterias common stock expired.

In connection with the warrant distribution to shareholders discussed above, 350,000 warrants with an exercise price of $5.00 per share held by Romulus Films, Ltd. were adjusted to become exercisable into 409,152 shares at an exercise price of $4.28 per share (the "Romulus Warrants"). These warrants had an original expiration date of September 30, 2016. On September 19, 2016, Asterias extended the expiration date of the Romulus Warrants to February 15, 2017, no other terms were changed. As a result of the extension of the expiration date of these warrants, Asterias recorded a $0.2 million non-cash charge to shareholder expense included in general and administrative expenses and a corresponding increase to equity for the year ended December 31, 2016. On February 3, 2017, Asterias extended the expiration date of the Romulus Warrants to September 29, 2017. As a result of this extension of the expiration date of these warrants, Asterias recorded a $0.3 million non-cash charge to shareholder expense included in general and administrative expenses and a corresponding increase to equity for the quarter ended March 31, 2017. On September 29, 2017, the unexercised Romulus Warrants that would have otherwise resulted in the issuance of 409,152 shares of Asterias common stock expired.

8. Stock-Based Compensation

The following table shows the stock-based compensation expenses included in the operating expenses for the three and nine months ended September 30, 2017 and 2016 (in thousands):

	Three Months Ended September 30, (Unaudited)		Nine Months Ended September 30, (Unaudited)	
	2017	2016	2017	2016
Research and development	$ 517	$ 638	$ 1,944	$ 1,994
General and administrative	389	534	1,671	1,654
Total stock-based compensation expense	$ 906	$ 1,172	$ 3,615	$ 3,648

The fair value of each option award is estimated on the date of grant using a Black-Scholes option valuation model applying the weighted-average assumptions in the following table:

	Three Months Ended September 30, (Unaudited)		Nine Months Ended September 30, (Unaudited)	
	2017	2016	2017	2016
Expected life (in years)	6.08	6.08	5.76	5.87
Risk-free interest rates	1.85%	1.23%	1.88%	1.32%
Volatility	73.31%	75.21%	74.73%	75.61%
Dividend yield	0%	0%	0%	0%

The risk-free rate is based on the rates in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to each grant's expected term. A dividend yield of zero is applied since Asterias has not historically paid dividends and does not expect to pay dividends in the foreseeable future. The expected volatility is based upon the volatility of Asterias' own trading stock and a group of publicly traded industry peer companies. The expected term of options granted is derived from using the simplified method under SEC *Staff Accounting Bulletin* Topic 14.

The determination of stock-based compensation is inherently uncertain and subjective and involves the application of valuation models and assumptions requiring the use of judgment. If Asterias had made different assumptions, its stock-based compensation expense, and net loss for the three and nine months ended September 30, 2017 and 2016, may have been significantly different.

9. Commitments and Contingencies

Development and Manufacturing Services Agreement

On August 3, 2016, Asterias entered into a Development and Manufacturing Services Agreement (the "Services Agreement") with Cognate BioServices, Inc. ("Cognate"), a fully-integrated contract bioservices organization providing development and current Good Manufacturing Practice ("cGMP") manufacturing services to companies and institutions engaged in the development of cell-based products.

Under the Services Agreement, Cognate is performing under an Initial Statement of Work process development studies in support of Asterias' clinical and commercial development activities of AST-VAC1 and production and manufacturing services of AST-VAC1 under cGMP under the Second Statement of Work. In consideration for the process development services set forth in the Initial Statement of Work, Asterias agreed to make aggregate payments of up to approximately $1.7 million in fees over the term of the Initial Statement of Work and pay for additional pass through costs for materials and equipment estimated by management to be approximately $0.5 million. In consideration of the production and manufacturing services set forth in the Second Statement of Work, once the services under the Initial Statement of Work are completed and if Asterias receives FDA concurrence on the clinical protocol for an AST-VAC1 trial, then Asterias will make an initial start-up payment, a monthly payment for dedicated manufacturing capacity, and certain other manufacturing fees.

On August 16, 2017, the Company amended SOW 1 ("Amended SOW 1") and entered into a Statement of Work 1.5 ("SOW 1.5") with Cognate to modify the timing of certain process development studies being performed by Cognate under the Services Agreement. Under Amended SOW 1 and SOW 1.5, Cognate will perform certain process development studies initially contemplated by SOW 1 under SOW 1.5 after Cognate has completed the activities under Amended SOW 1 and the Company provides written notice to commence the activities under SOW 1.5.

The Services Agreement will expire on the later of (a) August 3, 2019; or (b) the completion of all services contracted for by the parties in the Statements of Work under the Services Agreement prior to August 3, 2019. The term of the Services Agreement and any then pending Statements of Work thereunder may be extended by Asterias continuously for additional two-year periods upon written notice to Cognate with at least thirty days prior to the expiration of the then-current term.

The Services Agreement provides certain termination rights to each party and customary provisions relating to indemnity, confidentiality and other matters. Asterias incurred $112,000 and $536,000 of expense to Cognate pursuant to the Services Agreement for the three and nine months ended September 30, 2017.

Fremont Lease

On December 30, 2013, Asterias entered into a lease for an office and research facility located in Fremont, California, consisting of an existing building with approximately 44,000 square feet of space. The building is being used by Asterias as a combined office, laboratory and production facility that can be used to manufacture its product using current good manufacturing procedures. Asterias completed the tenant improvements in November 2015, which cost approximately $4.9 million, of which the maximum of $4.4 million was paid to Asterias by the landlord. Asterias placed the asset into service in November 2015 and is amortizing the leasehold improvements and the landlord liability over the remaining lease term through September 30, 2022.

As of September 30, 2017 and December 31, 2016, the landlord lease liability was $3.6 million and $4.0 million and the deferred rent liability was $310,000 and $266,000, respectively.

Litigation – General

Asterias is subject to various claims and contingencies in the ordinary course of its business, including those related to litigation, business transactions, employee-related matters, and others. When Asterias is aware of a claim or potential claim, it assesses the likelihood of any loss or exposure. If it is probable that a loss will result and the amount of the loss can be reasonably estimated, Asterias will record a liability for the loss. If the loss is not probable or the amount of the loss cannot be reasonably estimated, Asterias discloses the claim if the likelihood of a potential loss is reasonably possible and the amount involved could be material. Asterias is not aware of any claims likely to have a material adverse effect on its financial condition or results of operations.

Employment Contracts

Asterias has entered into employment contracts with certain executive officers. Under the provisions of the contracts, Asterias may be required to incur severance obligations for matters relating to changes in control, as defined and involuntary terminations.

Indemnification

In the normal course of business, Asterias may provide indemnifications of varying scope under Asterias' agreements with other companies or consultants, typically Asterias' clinical research organizations, investigators, clinical sites, suppliers and others. Pursuant to these agreements, Asterias will generally agree to indemnify, hold harmless, and reimburse the indemnified parties for losses and expenses suffered or incurred by the indemnified parties arising from claims of third parties in connection with the use or testing of Asterias' products and services. Indemnification provisions could also cover third party infringement claims with respect to patent rights, copyrights, or other intellectual property pertaining to Asterias products and services. The term of these indemnification agreements will generally continue in effect after the termination or expiration of the particular research, development, services, or license agreement to which they relate. The potential future payments Asterias could be required to make under these indemnification agreements will generally not be subject to any specified maximum amount. Historically, Asterias has not been subject to any claims or demands for indemnification. Asterias also maintains various liability insurance policies that limit Asterias' exposure. As a result, Asterias believes the fair value of these indemnification agreements is minimal. Accordingly, Asterias has not recorded any liabilities for these agreements as of September 30, 2017 and December 31, 2016.

10. Shared Facilities and Services Agreement

On April 1, 2013, Asterias and BioTime executed a Shared Facilities and Services Agreement ("Shared Services Agreement"). Under the terms of the Shared Services Agreement, Asterias has the right to use BioTime's premises and equipment located at Alameda, California, for the sole purpose of conducting Asterias' business. BioTime also may provide certain services, including basic accounting, billing, bookkeeping, payroll, treasury, collection of accounts receivable (excluding the institution of legal proceedings or taking of any other action to collect accounts receivable), payment of accounts payable, and other similar administrative services to Asterias and services of its laboratory and research personnel. BioTime may also provide the services of attorneys, accountants, and other professionals who may also provide professional services to BioTime and its other subsidiaries.

BioTime charges Asterias a fee for the services and usage of facilities, equipment, and supplies aforementioned. For each billing period, BioTime equitably prorates and allocates its employee costs, equipment costs, insurance costs, lease costs, professional costs, software costs, supply costs, and utilities costs, if any, between BioTime and Asterias based upon actual documented use and cost by or for Asterias or upon proportionate usage by BioTime and Asterias, as reasonably estimated by BioTime. Asterias pays 105% of the allocated costs (the "Use Fee"). The allocated cost of BioTime employees and contractors who provide services is based upon records maintained of the number of hours of such personnel devoted to the performance of services.

The Use Fee is determined and invoiced to Asterias on a quarterly basis for each calendar quarter of each calendar year. If the Shared Services Agreement terminates prior to the last day of a billing period, the Use Fee will be determined for the number of days in the billing period elapsed prior to the termination of the Shared Services Agreement. Each invoice is payable in full by Asterias within 30 days after receipt. Any invoice or portion thereof not paid in full when due will bear interest at the rate of 15% per annum until paid, unless the failure to make a payment is due to any inaction or delay in making a payment by BioTime employees from Asterias funds available for such purpose, rather than from the unavailability of sufficient funds legally available for payment or from an act, omission, or delay by any employee or agent of Asterias.

Asterias in turn may charge BioTime or any Other Subsidiary for similar services provided by Asterias at the same rate and terms as aforementioned. "Other Subsidiary" means a subsidiary of BioTime other than a subsidiary of Asterias.

The Shared Services Agreement was renewed through December 31, 2017. The term of the Shared Services Agreement will automatically be renewed and the termination date will be extended for an additional year each year, unless either party gives the other party written notice stating that the Shared Services Agreement will terminate on December 31 of that year.

BioTime allocated $117,000 and $683,000 of general overhead expenses to Asterias during the nine months ended September 30, 2017, and 2016, respectively. At September 30, 2017, Asterias had no net payable to BioTime under the Shared Services Agreement.

11. Income Taxes

The provision for income taxes is determined using an estimated annual effective tax rate. The effective tax rate may be subject to fluctuations during the year as new information is obtained, which may affect the assumptions used to estimate the annual effective tax rate, including factors such as valuation allowances against deferred tax assets, the recognition or de-recognition of tax benefits related to uncertain tax positions, if any, and changes in or the interpretation of tax laws in jurisdictions where Asterias conducts business.

Management believes that the Asterias net operating losses generated during the three and nine months ended September 30, 2017 will result in no income tax benefit or provision in the current year due to the full valuation allowance on its net deferred tax assets for the year ended December 31, 2016 and a full valuation allowance expected on its net deferred tax assets for the year ending December 31, 2017.

A valuation allowance is provided when it is more likely than not that some portion of the deferred tax assets will not be realized. Asterias established a full valuation allowance as of December 31, 2016 due to the uncertainty of realizing future tax benefits from its net operating loss carryforwards and other deferred tax assets.

A deferred federal income tax benefit of approximately $2.2 million was recorded for the nine months ended September 30, 2016 as Asterias' deferred tax liabilities exceeded their deferred tax assets and recorded no valuation allowance on its deferred tax assets. Asterias established deferred tax liabilities primarily related to its acquisition of certain intellectual property and available-for-sale securities held in BioTime and OncoCyte common stock. For state income tax purposes Asterias has a full valuation allowance on its state deferred tax assets as of September 30, 2017 and December 31, 2016 and, accordingly, no state tax provision or benefit was recorded for any period presented.

As discussed in Note 5, in connection with the Cross-License and Share Transfer transaction completed on February 16, 2016, the transfer of assets was a taxable transaction to Asterias generating a taxable gain of approximately $3.1 million. Asterias had sufficient current year losses from operations to offset the entire gain resulting in no income taxes due. As the transfer of assets and the resulting taxable gain is due to a direct effect of transactions between the former parent company, BioTime, and its former subsidiary, Asterias recorded the tax effect of this gain through equity in accordance with ASC 740-20-45-11(g).

12. License and Royalty Obligations

Services Agreement with Cell Therapy Catapult Services Limited

In October 2015, Asterias entered into a Services Agreement (the "Services Agreement") with Cell Therapy Catapult Services Limited ("Catapult"), a research organization specializing in the development of technologies which speed the growth of the cell and gene therapy industry. Under the Services Agreement, Catapult will license to Asterias, certain background intellectual property and will develop a scalable manufacturing and differentiation process for Asterias' human embryonic stem cell derived dendritic cell cancer vaccine development program. In consideration for the license and Catapult's performance of services, at the time of the Services Agreement Asterias agreed to make aggregate payments of up to GBP £4,350,000 over the period from October 2015 through January 2020 (approximately $5.8 million based on the foreign currency exchange rate on September 30, 2017). At the option of Asterias, up to GBP £3,600,000 (approximately $4.8 million based on the foreign currency exchange rate on September 30, 2017) of such payments historically may have been settled in shares of Asterias Series A Common Stock instead of cash. Prospectively, all payments due will be made in shares of Asterias Series A Common Stock. If Catapult is unable to sell the stock in the market within 60 days of issuance, after reasonable and diligent efforts through its broker, Catapult may request that the unsold portion of the stock payment, if any, be paid by Asterias in cash at a value equal to approximately 91% of the total amount that was issued in stock. This right by Catapult to put the unsold shares back to Asterias for cash expires the earlier to occur of the sale of the stock in the market or after 60 days of issuance.

Advance payments for research and development services to be performed by Catapult are deferred and recognized as research and development expense ratably as the services are performed. Advance payments related to licenses will be expensed when paid due to the experimental nature of the project. Pursuant to the Services Agreement, if there are any issued, but unsold Asterias stock, to Catapult for payment of services and the 60-day put right has not expired as of the period end being reported on, Asterias will present that amount as "temporary" equity in accordance with ASC 480-10-S99. Once the put right expires or the shares are sold by Catapult, the temporary equity amount will be reclassified by Asterias to permanent equity without adjustment to the carrying value of the stock.

In the nine months ended September 30, 2017 and 2016 Asterias paid $1.1 million and $1.4 million, respectively, for services pursuant to the Services Agreement. Asterias paid $295,000 and $710,000, respectively, in cash for these services and the remainder was paid with Asterias Series A Common Stock. Asterias issued 217,193 and 142,020 shares of Asterias Series A Common Stock with fair market values of $858,000 and $644,000 at the time of issuance which Asterias reclassified into permanent equity.

13. Clinical Trial and Option Agreement and CIRM Grant Award

On October 16, 2014 Asterias signed a Notice of Grant Award ("NGA") with CIRM, effective October 1, 2014, with respect to a $14.3 million grant award for clinical development of Asterias' product, AST-OPC1. The NGA was subsequently amended effective November 26, 2014 and March 2, 2016. The NGA includes the terms under which CIRM will release grant funds to Asterias. Under the NGA as amended on March 2, 2016, CIRM will disburse the grant funds to Asterias based on Asterias' attainment of certain progress milestones.

Asterias received an initial payment from CIRM in the amount of $917,000 during October 2014 and had received $12.8 million through December 31, 2016. In September 2017, we received the final $1.5 million payment under the CIRM grant which was due upon achievement of certain clinical milestones. We had no deferred grant income relating to the CIRM grant as of September 30, 2017 and deferred grant income relating to the CIRM grant was $2.2 million at December 31, 2016.

14. Subsequent Events

On October 16, 2017, Asterias entered into a Securities Purchase Agreement with certain purchasers, pursuant to which Asterias agreed to issue and sell, in a registered direct offering, an aggregate of 4,000,000 shares of Series A common stock at an offering price of $2.60 per share. Asterias closed the registered direct offering on October 18, 2017. The gross proceeds from this sale were approximately $10.4 million, before deducting the underwriting discounts and commissions and estimated offering expenses payable by the Company.

On November 2, 2017, we continued to make adjustments to our operating expenses as appropriate by reducing staffing allocated to non-clinical activities as a part of a broader effort to more closely align operating expenses with the Company's primary goal of continuing to generate clinical data in our clinical stage programs which we believe are the activities that have the greatest potential to create value for shareholders over the next several years. The reduction in staffing will affect approximately 30 employees and will be completed in the fourth quarter of 2017. The Company expects to recognize approximately $0.6 million of pre-tax restructuring charges in the fourth quarter of 2017 in connection with the reduction in staffing, consisting of severance and other employee termination benefits, substantially all of which are expected to be settled in cash.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The matters addressed in this Item 2 that are not historical information constitute "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, including statements about any of the following: any projections of earnings, revenue, gross profit, cash, effective tax rate, use of net operating losses, or any other financial items; the plans, strategies and objectives of management for future operations or prospects for achieving such plans, and any statements of assumptions underlying any of the foregoing. Any statements contained herein that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words "believes," "anticipates," "plans," "expects," "seeks," "estimates," and similar expressions are intended to identify forward-looking statements. While Asterias may elect to update forward-looking statements in the future, it specifically disclaims any obligation to do so, even if the Asterias' estimates change and readers should not rely on those forward-looking statements as representing Asterias' views as of any date subsequent to the date of the filing of this Quarterly Report. Although we believe that the expectations reflected in these forward-looking statements are reasonable, such statements are inherently subject to risks and Asterias can give no assurances that its expectations will prove to be correct. Actual results could differ materially from those described in this report because of numerous factors, many of which are beyond the control of Asterias. A number of important factors could cause the results of the company to differ materially from those indicated by such forward-looking statements, including those detailed under the heading "Risk Factors" in Part I, Item 1A of Asterias' Form 10-K for the year ended December 31, 2016, as updated by the Form 10-Q for the quarter ended June 30, 2017.

The following discussion should be read in conjunction with Asterias' interim condensed financial statements and the related notes provided under "Item 1- Financial Statements" above.

Company Overview

Asterias is a biotechnology company focused on the emerging fields of regenerative medicine and cancer immunotherapy. Asterias has two core technology platforms. The first is a type of stem cell capable of becoming all of the cell types in the human body, a property called pluripotency. The second is the use of a cell type called "dendritic cells" to teach cancer patients' immune systems to attack their tumors.

Asterias currently has three clinical stage programs based on these platforms: AST-OPC1 is a therapy derived from pluripotent stem cells that is currently in a Phase 1/2a clinical trial for spinal cord injuries; AST-VAC1 is a patient-specific cancer immunotherapy using dendritic cells which has completed a Phase 2 trial in the maintenance setting in Acute Myeloid Leukemia (AML); and AST-VAC2 is a non-patient specific cancer immunotherapy using dendritic cells for which our research partner Cancer Research UK is planning for the initiation of a Phase 1 clinical trial in non-small cell lung cancer. Asterias' technology platforms have the potential for application in additional indications, such as advanced multiple sclerosis and white matter stroke for AST-OPC1 and other additional cancer indications for our cancer immunotherapy platform.

Recent Developments

AST-OPC1

In October 2017, Asterias announced 12 month follow-up data from the AIS-A 10 million cell cohort ("Cohort 2") in its SCiStar Phase 1/2a clinical trial (the "SCiStar study"), and included the following observations:

- **Motor Level Improvement** – Additional motor level improvement was seen in Cohort 2 at 12 months.
    - Four of six subjects (67%) achieved at least two motor levels of improvement over baseline on at least one side as of their latest follow-up visit through 12 months, which compares favorably to the rates of recovery at 9 months (50%) and at 3 months and 6 months (33%). Furthermore, the rate of recovery at 12 months is more than double the rates of recovery seen at 12 months in both matched historical controls (29%) and published data in a similar patient population (26%).

- All six subjects (100%) achieved at least one motor level of improvement on both sides as of their latest follow-up through 12 months. This compares favorably to the matched historical controls, in which 74% of the subjects saw at least one motor level of improvement on at least one side of the body and thereby 26% of subjects saw no motor level improvement or got worse after their injury.
- In addition, one patient (18%) achieved three motor levels of improvement on one side as of his 12-month follow-up visit. In the matched historical controls, 8% of subjects achieved three or more motor levels of improvement on at least one side at 12 months.

- **Upper Extremity Motor Score** – Additional improvement in the average UEMS score for Cohort 2 was observed at 12 months. The average UEMS improvement for Cohort 2 at 12 months was 12.3 points, 57% greater than the average UEMS improvement at 12 months in the matched historical controls (7.8 points).

- **Magnetic Resonance Imaging (MRI) Data** - All six subjects in Cohort 2 (100%) had serial MRI scans at 12 months that indicated no sign of lesion cavities in any patient. The MRI results are consistent with formation of a tissue matrix at the injury site, which is supportive evidence showing that AST-OPC1 cells have durably engrafted to help prevent cavitation at the injury site.

- **Safety** - The trial results to date continue to suggest a positive safety profile for AST-OPC1.

In September 2017, the FDA granted Asterias' request for AST-OPC1 to be designated a Regenerative Medicine Advanced Therapy (RMAT) under the 21st Century Cures Act. The RMAT designation is intended to facilitate expedited development, review and approval for important new regenerative medicine therapies for which preliminary clinical evidence indicates the potential to address a serious or life-threatening disease or condition. In addition to providing an avenue for increased and earlier interactions with the FDA, RMAT-designated products may be eligible for priority review and accelerated approval.

Asterias has completed enrollment and dosing in four of the five planned SCiStar study cohorts and has enrolled twenty-four subjects in the SCiStar study. Three subjects have now been enrolled in the fifth and final cohort, Cohort 5 (AIS-B 20 million-cell cohort). Asterias intends to report 6-month data from Cohort 3 (AIS-A 20 million-cell cohort) and Cohort 4 (AIS-B 10 million-cell cohort) in early 2018 after the 6-month results are collected for the two cohorts.

AST-VAC2

In September 2017, Asterias announced that the Medicines and Healthcare Products Regulatory Agency (MHRA) and the NHS Research Ethics Committee (REC) had provided the necessary approvals to initiate the first-in-human (FIH) clinical trial of AST-VAC2 in the United Kingdom. In October 2017, Asterias' partner in this trial, Cancer Research UK, notified the company that, due to an issue at Cancer Research UK, the integrity of some or all of the vials which contain the currently available AST-VAC2 cells potentially have been compromised. Cancer Research UK is performing additional testing of the vials. If the testing confirms a vial integrity issue, then Cancer Research UK will have to manufacture an additional lot of AST-VAC2 cells before it can initiate the trial. The potential issue will delay the start of the trial until 2018.

Corporate

On October 16, 2017, Asterias entered into a Securities Purchase Agreement with certain purchasers, pursuant to which it agreed to issue and sell, in a registered offering by the company directly to the purchasers, an aggregate of 4,000,000 shares of Series A common stock, par value $0.0001 per share, of Asterias common stock, at an offering price of $2.60 per share. Asterias closed the registered offering on October 18, 2017. The gross proceeds from this sale were approximately $10.4 million, before deducting the underwriting discounts and commissions and estimated offering expenses payable by Asterias.

On November 2, 2017, Asterias continued to make adjustments to its operating expenses as appropriate by reducing staffing allocated to non-clinical activities as a part of a broader effort to more closely align operating expenses with the company's goal of continuing to generate clinical data in its clinical stage programs which we believe are the activities that have the greatest potential to create value for shareholders over the next several years. The reduction in staffing will affect approximately 30 employees and will be completed in the fourth quarter of 2017. The Company expects to recognize approximately $0.6 million of pre-tax restructuring charges in the fourth quarter of 2017 in connection with the reduction in staffing, consisting of severance and other employee termination benefits, substantially all of which are expected to be settled in cash.

Critical Accounting Policies

This Management's Discussion and Analysis of Financial Condition and Results of Operations discusses and analyzes data in our unaudited Condensed Financial Statements, which we have prepared in accordance with U.S. generally accepted accounting principles. Preparation of these financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Management bases its estimates on historical experience and on various other assumptions that it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Senior management has discussed the development, selection and disclosure of these estimates with the Audit Committee of our Board of Directors. Actual conditions may differ from our assumptions and actual results may differ from our estimates.

An accounting policy is deemed critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, if different estimates reasonably could have been used, or if changes in the estimate that are reasonably likely to occur could materially impact the financial statements. Management believes that there have been no significant changes during the three and nine months ended September 30, 2017 to the items that we disclosed as our critical accounting policies and estimates in Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2016.

Results of Operations

Comparison of three and nine months ended September 30, 2017 and 2016.

For the three months ended September 30, 2017 and 2016 we recorded net losses of $6.8 million and $10.6 million, respectively. For the nine months ended September 30, 2017 and 2016 we recorded net losses of $21.8 million and $26.1 million, respectively.

Revenues

The following table shows certain information about our revenues for the three and nine months ended September 30, 2017 and 2016 (in thousands, except for percentages):

	Three Months Ended September		$	%
	2017	2016	Decrease	Decrease
Grant income	$ 1,526	$ 1,858	$ -332	-18%
Royalties from product sales	162	218	-56	-26%
Total revenues	1,688	2,076	-388	-19%
Cost of sales	(81)	(59)	-22	-37%
Gross profit	$ 1,607	$ 2,017	$ -410	- 20%

	Nine Months Ended September 30,		$	%
	2017	2016	Decrease	Decrease
Grant income	$ 3,711	$ 4,865	$ -1,154	- 24%
Royalties from product sales	303	337	-34	- 10%
Total revenues	4,014	5,202	-1,188	- 23%
Cost of sales	(151)	(118)	-33	-28%
Gross profit	$ 3,863	$ 5,084	$ - 1,221	- 24%

Grant income in 2016 was entirely from CIRM, which awarded us a $14.3 million grant for clinical development of AST-OPC1. We received our first payment from CIRM in the amount of $917,000 during October 2014 and had received $12.8 million through December 31, 2016. In September 2017, we received the final $1.5 million payment under the CIRM grant due upon achievement of certain clinical milestones. Revenues recognized under the CIRM grant during the nine months ended September 30, 2017 and 2016 were $3.7 and $4.9 million, respectively.

Our royalty revenues from product sales is entirely from non-exclusive license agreements with Stem Cell Technologies, Inc., Corning Life Science, Life Tech, and Millipore, each of which we assumed as part of the consideration received from Geron under the 2013 Asset Contribution Agreement.

Operating Expenses

The following table shows our operating expenses for the three and nine months ended September 30, 2017 and 2016 (in thousands, except for percentages):

	Three Months Ended September 30,		$ Increase/ (Decrease)	% Increase/ Decrease
	2017	2016		
Research and development expenses	$ 6,624	$ 5,232	$ +1,392	+27%
General and administrative expenses	2,046	4,210	-2,164	-51%

	Nine Months Ended September 30,		$ Increase/ (Decrease)	% Increase/ Decrease
	2017	2016		
Research and development expenses	$ 20,206	$ 17,594	$ +2,612	+15%
General and administrative expenses	8,360	13,081	-4,721	-36%

Research and development expenses – Research and development expenses increased $1.4 million to $6.6 million for the three months ended September 30, 2017 compared to $5.2 million for the three months ending September 30, 2016. This increase was largely associated with increased license and patent related expenses of $0.8 million combined with increased headcount and headcount related costs of $0.5 million. Research and development expenses increased $2.6 million to $20.2 million for the nine months ended September 30, 2017 compared to $17.6 million for the nine months ending September 30, 2016. This increase was largely associated with a $1.8 million increase in spending related to our AST-OPC1 clinical trial and AST-OPC1-related manufacturing planning expenses combined with increased headcount and headcount related spending of $0.5 million.

General and administrative expenses – General and administrative expenses decreased by approximately $2.2 million to $2.0 million for the three months ended September 30, 2017 compared to $4.2 million for the same period in 2016. The decrease in general and administrative expense is primarily attributable to a decrease of $2.2 million in shareholder warrant distribution expense related to revaluing warrants outstanding. General and administrative expenses decreased by approximately $4.7 million to $8.3 million for the nine months ended September 30, 2017 compared to $13.1 million for the same period in 2016. The decrease in general and administrative expense is primarily attributable to a decrease of $3.8 million in shareholder warrant distribution expense related to revaluing warrants outstanding. Additionally we had a decrease of $0.4 million in legal related expenses for the nine months ended September 30, 2017 and a decrease of $0.4 million in salaries due to severance paid to two executives in 2016.

Other income/(expense), net

Other income/(expense), net – Other expense, net, in 2017 and 2016 consists primarily of the change in fair value of the warrants classified as liabilities.

Income Taxes

Management believes that our net operating losses incurred during the three and nine months ended September 30, 2017 will result in no income tax benefits in the current year due to the full valuation allowance as of December 31, 2016 and a full valuation allowance expected on its net deferred tax assets for the year ending December 31, 2017.

A deferred federal income tax benefit of approximately $0.9 million and $2.2 million was recorded for the three and nine months ended September 30, 2016 as Asterias had no valuation allowance on its deferred tax assets as of December 31, 2015. Asterias established deferred tax liabilities primarily related to its acquisition of certain intellectual property and available-for-sale securities held in BioTime and OncoCyte common stock.

Liquidity and Capital Resources

At September 30, 2017, we had $8.6 million of cash and cash equivalents on hand, held 3,746,549 BioTime common shares and 192,644 shares of OncoCyte common stock, with a market value of $10.6 million and $1.5 million, respectively. We may raise capital from time to time through the sale of our Series A Shares or other securities, and our BioTime or OncoCyte common shares. We may sell our Series A Shares or other securities in public offerings registered under the Securities Act of 1933, as amended (the "Securities Act"), including in at-the-market transactions, or in private placements to select investors. We may sell our BioTime common shares, from time to time, by any method that is deemed to be an "at-the-market" equity offering as defined in Rule 415 promulgated under the Securities Act, including sales made directly on or through the NYSE American or any other existing trading market for the common shares in the U.S. or to or through a market maker, at prices related to the prevailing market price, or through block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction, or through one more of the foregoing transactions. We may also sell some or all of our BioTime common shares and OncoCyte common shares by any other method permitted by law, including in privately negotiated transactions. We will bear all broker-dealer commissions payable in connection with the sale of our Series A Shares, our BioTime common shares, OncoCyte common shares or other securities. Broker-dealers may receive commissions or discounts from us (or, if any broker-dealer acts as agent for the purchaser of shares, from the purchaser) in amounts to be negotiated. The prices at which we may issue and sell our Series A Shares, our BioTime common shares, our OncoCyte common shares or other securities in the future are not presently determinable and will depend upon many factors, including prevailing prices for those securities in the public market.

On March 28, 2017, Asterias entered into an amendment to its at-the-market (ATM) Sales Agreement, dated April 10, 2015, with MLV. The amendment to the Sales Agreement was entered into by Asterias, MLV and FBR Capital Markets & Co. ("FBR" and together with MLV, the "Agents"), which acquired MLV. Under the Sales Agreement, as amended, Asterias may issue and sell shares of its Series A common stock having an aggregate offering price of up to $25 million from time to time on or after March 28, 2017, through the Agents, subject to certain limitations, including the number of shares registered and available under the Company's previously filed and currently effective shelf registration statement on Form S-3 (File No. 333-215154) (the "Registration Statement"). For the nine months ended September 30, 2017, Asterias has sold approximately 2.0 million shares of Series A common stock for gross proceeds of $8.0 million. For the nine months ended September 30, 2016, Asterias sold 509,897 shares of Series A common stock for gross proceeds of approximately $2.1 million.

We plan to use the proceeds and other cash we have available for general corporate purposes, including to fund our ongoing clinical programs, to develop certain of our product candidates and technology, to acquire new stem cell products and technology through licenses or similar agreements from other companies, and to defray overhead expenses and to pay general and administrative expenses.

Since inception, we have incurred net losses and have funded our operations primarily through the issuance of equity securities, warrants, payments from research grants, and royalties from product sales. At September 30, 2017 we had an accumulated deficit of $105.6 million, working capital of $19.6 million and stockholders' equity of $31.7 million. We have evaluated our projected cash flows and believe that our cash and cash equivalents of $8.6 million as of September 30, 2017 and our available-for-sale securities of $12.1 million as of September 30, 2017, as supplemented by the $10.4 million in gross proceeds from the sale of shares of the company's Series A common stock in a registered offering that was completed on October 18, 2017, will be sufficient to fund our operations through at least the next twelve months from the issuance date of these financial statements. Additionally, the Company expanded its operating expense reduction efforts in order to further reduce its cash usage. If the value of Asterias' available-for-sale securities decreases or it is unable to obtain future adequate financing for its clinical trials, it may be required to delay, postpone, or cancel its clinical trials or limit the number of clinical trial sites, or otherwise reduce or curtail its operations. Future financings may not be available to Asterias at acceptable terms, or at all. Sales of additional equity securities would result in the dilution of interests of current shareholders.

During the nine months ended September 30, 2017, our total research and development expenditures were $20.2 million and our general and administrative expenses were $8.4 million. Our sources of cash during 2017 primarily consisted of $8.0 million from sales of our equity securities. As of September 30, 2017 and December 2016, we had a working capital surplus of $19.6 million and $30.9 million, respectively.

Cash used in operations

Net cash used in operating activities during the nine months ended September 30, 2017 amounted to $18.7 million. The difference between the net loss and net cash used in operating activities during the period was primarily attributable to the following non-cash items: Asterias Warrants classified as equity non-cash expense in the amount of $2.0 million related to the modification of expiration date, stock-based compensation of $3.6 million, $2.0 million in amortization of intangible assets, $858,000 of stock issued in lieu of cash to a contract vendor and $840,000 in depreciation and amortization expense offset by $3.4 million in non-cash decrease on the Asterias Offering Warrants classified as a liability. The remaining $3.0 million is associated with changes in our operating assets and liabilities; of which $2.2 million is associated with decreases in our deferred grant income, and $1.5 million is associated with decreases in accounts payable and other accrued liabilities offset by a $608,000 decrease in our prepaid and other current assets.

Net cash used in operating activities during the nine months ended September 30, 2016 amounted to $15.1 million. The difference between the net loss and net cash used in operating activities during the period was primarily attributable to the following non-cash items: Asterias warrants non-cash expense to its shareholders in the amount of $5.3 million, stock-based compensation of $3.6 million, $2.4 million in unrealized loss on the Asterias Offering Warrants classified as a liability, $2.0 million in amortization of intangible assets, $644,000 of stock issued in lieu of cash to a contract vendor and $909,000 in depreciation expense. The non-cash increases were offset by $2.3 million in federal deferred income tax benefit. Changes in working capital resulted in a $1.6 million use of cash.

Investing and financing activities

During the nine months ended September 30, 2017, we used $237,000 to purchase equipment which was offset by $281,000 in cash received from the sale of shares of our available-for-sale securities.

During the nine months ended September 30, 2016, we paid $643,000 for property, plant and equipment including tenant improvements and other fixed assets. In March 2016, we received $31,000 of the security deposit back from our previous office location in Menlo Park.

During the nine months ended September 30, 2017, Asterias raised approximately $7.8 million in net proceeds under its ATM from the sale of 2,005,784 shares of its common stock at a weighted average price of $3.99 per share.

During the nine months ended September 30, 2016, we completed an underwritten public offering and issued 5,147,059 shares of common stock, and warrants to purchase an aggregate of 2,573,530 shares of common stock at an exercise price of $4.37 per share; we issued an additional 742,421 shares of common stock upon the full exercise of the over-allotment option by the underwriters for aggregate net proceeds of $18.2 million from the Asterias Offering. We received $567,000 from our landlord on reimbursable construction in progress financed by the landlord and received $2.0 million from the exercise of stock options.

Contractual Obligations

As of September 30, 2017, there were no material changes to the contractual obligations information in Item 7 in our Annual Report on Form 10-K filed with the SEC on March 28, 2017.

Off-Balance Sheet Arrangements

As of September 30, 2017 and December 31, 2016, we did not have any off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of SEC Regulation S-K.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

There have been no material changes in Asterias' qualitative and quantitative market risk since the disclosure in Asterias' Annual Report on Form 10-K for the year ended December 31, 2016, except as follows.

Available-for-sale securities at fair value

We hold 3,746,549 BioTime common shares and 192,644 shares of OncoCyte common stock at fair value; therefore, our available-for-sale investment values are subject to changes in the stock price of BioTime and OncoCyte. BioTime common stock trades on the NYSE American under the ticker "BTX" and OncoCyte common stock trades on the NYSE American under the ticker "OCX". As of September 30, 2017, the 52-week high/low stock price per share range for BioTime and OncoCyte shares were $2.47 - $3.97 and $3.60 - $7.95, respectively.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, including our principal executive officer and principal financial officer, have reviewed and evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Following this review and evaluation, the principal executive officer and principal financial officer determined that our disclosure controls and procedures are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act (i) is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to management, including our principal executive officer, and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Controls

There were no changes in our internal control over financial reporting that occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are 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 litigation incidental to the conduct of our business. We are not presently involved in any other material litigation or proceedings, and to our knowledge no such litigation or proceedings are contemplated.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described in Part I, Item 1A, "Risk Factors" in our Form 10-K for the year ended December 31, 2016 and under the heading "Risk Factors" in Part II, Item 1A of our Form 10-Q for the quarter ended June 30, 2017, which could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our securities. There have been no material changes to our risk factors since our Annual Report on Form 10-K for the year ended December 31, 2016, as updated by the Form 10-Q for the quarter ended June 30, 2017.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Default Upon Senior Securities

None.

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number		Description
10.1	*	Amendment to Securities Purchase Agreement
31.1	*	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	*	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	**	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101	*	XBRL Instance Document
101.INS	*	XBRL Taxonomy Extension Schema
101.CAL	*	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	*	XBRL Taxonomy Extension Definition Linkbase
101.LAB	*	XBRL Taxonomy Extension Label Linkbase
101.PRE	*	XBRL Taxonomy Extension Presentation Linkbase

* Filed herewith.

** Furnished herewith.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ASTERIAS BIOTHERAPEUTICS, INC.

Date: November 14, 2017

/s/ Michael H. Mulroy
Michael H. Mulroy
President and Chief Executive Officer

Date: November 14, 2017

/s/ Ryan Chavez
Ryan Chavez
Chief Financial Officer

Exhibit 10.1

AMENDMENT NO. 1
TO
SECURITIES PURCHASE AGREEMENT

This Amendment No. 1 to the Securities Purchase Agreement (this "**Amendment**") is made as of October 16, 2017 by and among Asterias Biotherapeutics, Inc., a Delaware Corporation (the "**Company**") and each purchaser identified on the signature pages thereto (each a "**Purchaser**" and collectively together with the Company, the "**Parties**"). Capitalized terms not defined herein shall have the definitions set forth in the Securities Purchase Agreement dated as of October 16, 2017, (the "**Agreement**").

RECITAL

WHEREAS, The Parties entered into the Agreement and now desire to further amend the Agreement as set forth in this Amendment;

WHEREAS, Section 5.5 of the Agreement provides that the Purchasers who purchased at least a majority in interest of the Shares, based on the initial Subscription Amounts thereunder, may amend the Agreement; and

WHEREAS, the undersigned Purchasers constitute at least a majority in interest of the Shares, based on the initial Subscription Amounts thereunder, may amend the Agreement.

NOW, THEREFORE, in consideration of the premises and other good and valuable consideration, the receipt of which is acknowledged, the Parties agree as follows:

AMENDMENT

1. Section 4.12(b) of the Agreement is hereby amended and restated as follows:

(b) From the date hereof until twelve (12) months after the Closing Date, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. "Variable Rate Transaction" means a transaction in which the Company (i) issues or sells any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into any agreement, including, but not limited to, an equity line of credit or at-the-market offering, whereby the Company may issue securities at a future determined price (other than standard and customary "preemptive" or "participation" rights, pursuant to a shareholder rights plan or pursuant to an agreement with a third party for an investment, acquisition or other business combination transaction or pursuant to any program established whereby suppliers and/or vendors may acquire shares as an incentive to sell products), it being acknowledged that the Company has an existing at-the-market sales agreement with MLV & Co. and FBR Capital Markets & Co. for the sale of Common Stock having an aggregate value of up to $25 million, and the Company shall be entitled to terminate such agreement with MLV & Co. and FBR Capital Markets & Co., and enter into a replacement at-the-market sales agreement with another firm for the sale of Common Stock up to the remaining amount available under the at-the-market sales agreement with MLV & Co. and FBR Capital Markets & Co. immediately prior to its termination. Any Purchaser shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages.

2. Except as set forth in this Amendment, the Agreement remains unchanged and continues in full force and effect.

3. This Amendment may be executed in two (2) or more counterparts, each of which shall be deemed an original, but all of which taken together shall constitute one and the same agreement. Facsimile or other electronic signatures shall in all respects be deemed an original for all purposes relating to this Agreement.

[Signatures appear on following page]

IN WITNESS WHEREOF, the Parties have caused this Amendment No. 1 to be executed by their duly authorized representatives as of the Effective Date.

MMCAP INTERNATIONAL INC.

By: /s/ Matthew MacIssac
Name: Matthew MacIssac
Title: Director

BROADWOOD PARTNERS, L.P.

By: /s/ Neal Bradsher
Name: Neal Bradsher
Title: President of General Partner of Broadwood Partners, L.P.

ASTERIAS BIOTHERAPEUTICS, INC.

By: /s/ Michael Mulroy
Name: Michael Mulroy
Title: Chief Executive Officer

Exhibit 31.1

CERTIFICATIONS

I, Michael H. Mulroy, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Asterias Biotherapeutics, 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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rule 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 periodic 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 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 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 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: November 14, 2017

/s/ Michael H. Mulroy
Michael H. Mulroy
President and Chief Executive Officer
(principal executive officer)

Exhibit 31.2

CERTIFICATIONS

I, Ryan Chavez, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Asterias Biotherapeutics, 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 and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rule 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 periodic 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 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 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 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: November 14, 2017

/s/ Ryan Chavez
Ryan Chavez
Chief Financial Officer
(principal financial officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of Asterias Biotherapeutics, Inc. (the "Company") for the quarter ended September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned, Michael H. Mulroy and Ryan Chavez, certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 14, 2017

/s/ Michael H. Mulroy
Michael H. Mulroy
President and Chief Executive Officer

/s/ Ryan Chavez
Ryan Chavez
Chief Financial Officer

The Foregoing certification is being furnished pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 and shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise subject to the liability of that section. This certification will not be deemed incorporated by reference into any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934.