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

SCHEDULE 14A
(Rule 14a-101)

INFORMATION REQUIRED IN PROXY STATEMENT
SCHEDULE 14A INFORMATION

Proxy Statement Pursuant to Section 14(a) of the Securities Exchange Act of 1934

Filed by the Registrant ☒
Filed by a Party other than the Registrant ☐
Check the appropriate box:

- ☐ Preliminary Proxy Statement
- ☐ Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- ☐ Definitive Proxy Statement
- ☒ Definitive Additional Materials
- ☐ Soliciting Material Pursuant to §240.14a-12

Asterias Biotherapeutics, Inc.

(Name of Registrant as Specified in Its Charter)

Payment of Filing Fee (Check the appropriate box):

- ☒ No fee required.
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May 1, 2017

Dear Fellow Shareholders,

The year 2016 marked a key inflection point in the evolution of our company. Our flagship cell therapy program, AST-OPC1, focusing on the treatment of severe spinal cord injury, has steadily progressed through many years of basic scientific research, extensive preclinical work, safety evaluation, and discussions with the FDA. This long-running effort has been based on the idea that injecting stem-cell-derived oligodendrocyte progenitor cells into recently damaged spinal cord tissue has the potential to transform how patients can recover from their devastating injuries. This last year we were able to collect the very first set of efficacy data in patients with serious spinal cord injury treated with AST-OPC1. And this first look has been very encouraging. Patients with complete paralysis due to cervical spinal cord injury, after being treated with 10 million cells of AST-OPC1, have shown substantial improvement in recovery of arm, hand and finger function after 3-months. Moreover, these same patients showed additional motor function improvement at 6-months and even 9-months after receiving AST-OPC1. The results to date indicate that there is a meaningful increase in recovery of arm, hand and finger function in patients treated with the 10 million cell dose of AST-OPC1 compared to spontaneous recovery rates seen in a closely matched population of untreated patients.

After so many years of research and dedication, this could well be the first glimpse of the therapeutic potential of AST-OPC1 to help the estimated 17,000 individuals who suffer spinal cord injuries each year in the United States regain the ability to use their hands, arms and fingers and as a result live more independently. This long-awaited efficacy data may represent a major step towards realizing the promise of pluripotent stem cells as therapy for various serious human diseases and disorders for which effective, safe treatments have been elusive.

We also achieved other notable progress with our AST-OPC1 development program over the last year. We received FDA clearance to expand the SCiStar study to include two additional cohorts of subjects with less severe AIS-B (motor complete, sensory incomplete) injuries and commenced dosing of the first of these two cohorts: AIS-B patients treated with 10 million AST-OPC1 cells. Additionally, following on the promising efficacy and robust safety data observed in our AIS-A 10 million cell cohort, we dose escalated and initiated enrollment in our third and final cohort of AIS-A patients, who are being treated with the higher dose of 20 million AST-OPC1 cells. Importantly, we also completed the validation and start-up of our Good Manufacturing Practices (GMP) manufacturing facility in Fremont, CA, in preparation for late stage trials of AST-OPC1. Additionally, in February we received Orphan Drug Designation from FDA for AST-OPC1 for the treatment of acute spinal cord injury, a status which confers certain regulatory and financial benefits, as well as seven years of market exclusivity upon marketing approval.

Looking ahead, we expect to complete enrollment in the SCiStar study later this year, and to initiate discussions with the FDA mid-year to determine our optimal clinical path forward for AST-OPC1. In addition, we look forward to reporting 12-month efficacy and safety data for the AIS-A 10 million cohort in the third quarter, and we also expect to provide updates later this year on the currently enrolling AIS-A 20 million cell and AIS-B 10 million cell cohorts.

In addition to advancing AST-OPC1, we are focused on preparing our two cancer immunotherapy development programs, AST-VAC1 and AST-VAC2, for future clinical trials. Both of these investigational therapies target the telomerase protein that is present in 95% of all cancers, and so we believe both have potential broad utility across multiple types of cancer.

Regarding AST-VAC2, in early 2016 we completed the transfer of the manufacturing process to our development partner, Cancer Research UK, or CRUK. CRUK will both fund and conduct the clinical trial, which will examine the safety, immunogenicity and activity of AST-VAC2 in subjects with non-small cell lung cancer. We expect CRUK to begin enrolling subjects in the study this summer.

In summary, 2016 was quite a successful year for Asterias, with the very encouraging first set of efficacy data for AST-OPC1 becoming available, and we continued to make solid progress in the development of all three of our revolutionary new medical therapies. In 2017 we plan to continue progressing our three clinical-stage programs and executing our strategy in a capital-efficient manner. On behalf of all Asterias employees, I want to thank you for your continued support.

Steve Cartt
President and Chief Executive Officer

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