Zacks Small-Cap Research

November 17, 2017
David Bautz, PhD
312-265-9471
dbautz@zacks.com

scr.zacks.com
10 S. Riverside Plaza, Chicago, IL 60606

AmpliPhi Biosciences Corp. (APHB-NYSE American)

APHB: Six Patients Treated So Far With AB-SA01 and AB-PA01 Under Expanded Access Programs…

Based on our probability adjusted DCF model that takes into account potential future revenues from the company's personalized phage therapies, AB-SA01, and AB-PA01, APHB is valued at $3.50/share. This model is highly dependent upon continued clinical and regulatory success and will be adjusted accordingly based upon future results.

Current Price (11/17/17)	$0.92
Valuation	**$3.50**

OUTLOOK

On November 14, 2017, AmpliPhi Biosciences Corp. (APHB) announced financial results for the third quarter of 2017 and provided a business update. The company exited the quarter with $7.7 million in cash and cash equivalents, which we believe will be sufficient to fund operations into mid-2018.

AmpliPhi reported that a total of six patients with life-threatening infections have been treated thus far under expanded access programs with either AB-SA01 or AB-PA01. All treatments were well tolerated, and we anticipate additional details about the outcomes of these treatments to be presented at upcoming scientific conferences.

SUMMARY DATA

52-Week High	**$9.70**
52-Week Low	**$0.71**
One-Year Return (%)	**-86.67**
Beta	**2.95**
Average Daily Volume (sh)	**273,063**
Shares Outstanding (mil)	**9**
Market Capitalization ($mil)	**$9**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**12**
Insider Ownership (%)	**2**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2016 Estimate	**N/A**
P/E using 2017 Estimate	**N/A**

Risk Level	**High,**
Type of Stock	**Small-Value**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue
(In millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	0.1 A	0.1 A	0.0 A	0.0 A	0.3 A
2017	0.0 A	0.0 A	0.0 A	0.0 E	0.0 E
2018					0.0 E
2019					0.0 E

Earnings per Share
(EPS is operating earnings before non-recurring items)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2016	-$8.22 A	$7.26 A	-$3.23 A	-$5.55 A	-$24.68 A
2017	-$1.92 A	-$1.21 A	-$0.09 A	-$0.35 E	-$2.17 E
2018					-$1.17 E
2019					-$1.18 E

© Copyright 2017, Zacks Investment Research. All Rights Reserved.

WHAT'S NEW

Business Update

Additional Patients Treated Under Expanded Access Protocol

AmpliPhi Biosciences Corp. (APHB) is developing bacteriophage therapeutics for the treatment of bacterial infections. AmpliPhi's strategy is to use single patient expanded access protocols to derive real-world data using phage therapies in patients suffering from severe, multidrug-resistant (MDR) infections. In addition to offering hope to patients that have exhausted all treatment options, clinical data derived from single patient expanded access cases will help to support the utility of phage therapy when the company engages the U.S. Food and Drug Administration (FDA) in discussions for a regulatory path forward for approval of phage therapies.

- The company is looking for patients in areas of high unmet medical need, for instance in patients with prosthetic joint replacements, bacteremia, endocarditis, complicated urinary tract infections, and lung infections (including patients with cystic fibrosis).

- AmpliPhi is hoping to collect data from approximately 10-30 patients (they are on track to treat 10 patients by the end of 2017), and the hope is that within that group of patients there will be smaller groups of 4-5 patients with similar conditions (e.g., infected joint prosthetic), thus enabling the company to design Phase 2 trials for those conditions, which may or may not end up being pivotal trials. We estimate the company could finish collecting data from a sufficient number of patients during the first half of 2018.

- The initial focus will be on patients with infections caused by *Staphylococcus aureus* (to be treated with AB-SA01) and *Pseudomonas aeruginosa* (to be treated with AB-PA01), since those are the most advanced products in the company's pipeline, and there is already an IND in place for AB-SA01.

- The company is still determining the best way to disseminate data on the single patient expanded access cases as it becomes available, and will be working closely with each institution to be sure the information that is publicly released is accurate and timely. We believe scientific meetings are the most likely venues for presenting data on the various patients that are treated, however we would not be surprised to see a few press releases over the next 6 months detailing a few of the cases, such as the case discussed below.

During the third quarter 2017 conference call, management provided an update on the expanded access protocol program. Thus far, a total of six patients have been dosed at two teaching hospitals, one in the U.S. and one in Australia. Three patients have been dosed with AB-PA01 and three patients with AB-SA01. All of the patients fit into one of the categories discussed in the first bullet point above.

For all of the six cases, patients received multiple doses of therapy and the company is "strongly encouraged" with the results, including good tolerability. The company is very limited in what information can be discussed for each case as the medical teams treating the patients would like to submit the detailed results for presentation at future medical conferences.

The goal is to treat a total of 10 patients by the end of 2017 and then an additional 20 critically ill patients in the first half of 2018. Based on the clinical and microbiological data collected, the company then plans to select lead indications for further clinical development following consultation with the FDA and other regulatory agencies. We anticipate the company providing further updates on lead indications in the first half of 2018.

The FDA has already expressed a willingness to work with AmpliPhi to help design a regulatory path for phage therapies. Thus, we believe at least one Phase 2 trial (which could even be a pivotal trial) could get underway before the end of 2018.

On the call, Chief Operating Officer Igor Bilinsky gave bacteremia caused by *S. aureus* as an example of an indication with a large unmet medical need that could be helped by phage therapy. There are approximately 150,000 cases each year with approximately 20% of cases being lethal. The increasing incidence of antibiotic resistance is resulting in a rise in difficult to treat bacteremia cases and points to an urgent need for novel therapies that are differentiated from traditional antibiotics.

Financial Update

On November 14, 2017, AmpliPhi announced financial results for the third quarter of 2017. The company reported $38,000 in revenue from the former gene therapy program. We anticipate this revenue to be insignificant in future quarters. The company reported a net loss of $0.8 million, or $0.09 per share. In September 2017, the company received a tax incentive payment of approximately $2.0 million from the Australian tax authority, which was recorded as an offset to R&D expenses in the third quarter of 2017 resulting in a net benefit of $0.8 million. Excluding this benefit, R&D expenses for the third quarter of 2017 were $1.2 million, compared to $1.7 million for the third quarter of 2016. The decrease was primarily due to a decrease in professional and consulting fees as well as decreased clinical expenses. G&A expenses were $1.6 million for the third quarter of 2017 compared to $1.8 million for the third quarter of 2016. The decrease was primarily attributable to a a decrease in legal fees and non-cash stock-based compensation.

The company exited the third quarter of 2017 with approximately $7.7 million in cash and cash equivalents. We estimate that the company has sufficient capital to fund operations through the second quarter of 2018.

As of November 8, 2017, the company had approximately 9.5 million shares outstanding. When factoring in options and reasonably priced warrants (8.0 million at $1.50 and 0.5 million at $0.57), the company has a fully diluted share count of 19.1 million.

Conclusion

AmpliPhi's new strategic focus appears to be an intriguing way to get phage therapies to patients sooner and we will be very interested to hear updates on the most recent cases disclosed by the company. It is encouraging that the FDA understands the unique situation that phage therapies are in from a regulatory standpoint, and it will be vital for the FDA to be willing to work with the company since the traditional means of product approval are not likely to be applicable to phage therapies.

We have adjusted our discounted cash flow model based on the company's new strategic focus. The timelines for AB-SA01 and AB-PA01 in the treatment of chronic rhinosinusitis and cystic fibrosis have been extended and we have added the use of AB-SA01 and AB-PA01 to treat resistant hospital acquired infections, which total approximately 72,000 for *S. aureus* and 7,000 for *P. aeruginosa* (CDC). Based on the data from the CDC, we estimate there are currently approximately 18,000 infections from those two pathogens that could be targeted for individualized phage therapies in the U.S. (all potential fatal cases and 10% of non-fatal but potentially life-threatening cases). We estimate that AmpliPhi could achieve regulatory approval in 2021, and with an estimated $8,000 cost per treatment, we believe the company could achieve peak sales of $60 million from targeting just *S. aureus* and *P. aeruginosa*. Using a 20% discount rate and a 50% probability of approval leads to an NPV of $54 million. Combined with the values assigned for the treatment of chronic rhinosinusits and cystic fibrosis, expected additional capital requirements of $25 million, and dividing by the reasonable fully diluted share count of 19.1 million leads to a valuation of approximately $3.50 per share.

PROJECTED INCOME STATEMENT

AmpliPhi Biosciences Corporation
Income Statement

AmpliPhi Bio	2016 A	Q1 A	Q2 A	Q3 A	Q4 E	2017 E	2018 E	2019 E
AB-PA01 (*P. aeruginosa*)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
YOY Growth								
AB-SA01 (*S. aureus*)	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
YOY Growth								
Licensing & Royalties	**$0.3**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0.0**	**$0.0**
YOY Growth	-	-	-	-	-	-	-	-
Total Revenues	**$0.3**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.1**	**$0.0**	**$0.0**
YOY Growth	-	-	-	-	-	-	-	-
Cost of Sales	$0	$0	$0	$0	$0	$0	$0	$0
Product Gross Margin	-	-	-	-	-	-	-	-
General & Administration	$8.4	$1.9	$2.8	$1.6	$1.8	$8.1	$8.0	$10.0
Research & Development	$5.7	$1.5	$1.1	($0.8)	$1.5	$3.3	$6.0	$6.5
Other Operating Expenses	$9.5	$0.0	$5.8	$0.0	$0.0	$5.8	$0.0	$0.0
Operating Income	($23.4)	($3.4)	($9.7)	($0.7)	($3.3)	($17.1)	($14.0)	($16.5)
Operating Margin	-	-	-	-	-	-	-	-
Non-Operating Expenses (Net)	$4.0	$0.1	$1.9	($0.0)	$0.0	$2.0	$0.0	$0.0
Pre-Tax Income	($19.4)	($3.2)	($7.8)	($0.8)	($3.3)	($15.1)	($14.0)	($16.5)
Income Taxes Paid	($1)	$0	($1)	$0	$0	($1)	$0	$0
Tax Rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Deemed Dividends	$5	$0	$0	$0	$0	$0	$0	$0
Net Income	($24.3)	($3.2)	($6.5)	($0.8)	($3.3)	($13.8)	($14.0)	($16.5)
Net Margin	-	-	-	-	-	-	-	-
Reported EPS	**($24.68)**	**($1.94)**	**($1.21)**	**($0.09)**	**($0.35)**	**($2.17)**	**($1.17)**	**($1.18)**
YOY Growth	*24%*	-	-	-	-	*-91%*	*-46%*	*1%*
Basic Shares Outstanding	1.0	1.7	5.4	8.9	9.5	6.4	12.0	14.0

Source: Zacks Investment Research, Inc. *David Bautz, PhD*

© Copyright 2017, Zacks Investment Research. All Rights Reserved.

HISTORICAL STOCK PRICE



© Copyright 2017, Zacks Investment Research. All Rights Reserved.

DISCLOSURES

The following disclosures relate to relationships between Zacks Small-Cap Research ("Zacks SCR"), a division of Zacks Investment Research ("ZIR"), and the issuers covered by the Zacks SCR Analysts in the Small-Cap Universe.

ANALYST DISCLOSURES

I, David Bautz, PhD, hereby certify that the view expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the recommendations or views expressed in this research report. I believe the information used for the creation of this report has been obtained from sources I considered to be reliable, but I can neither guarantee nor represent the completeness or accuracy of the information herewith. Such information and the opinions expressed are subject to change without notice.

INVESTMENT BANKING AND FEES FOR SERVICES

Zacks SCR does not provide investment banking services nor has it received compensation for investment banking services from the issuers of the securities covered in this report or article.
Zacks SCR has received compensation from the issuer directly or from an investor relations consulting firm engaged by the issuer for providing non-investment banking services to this issuer and expects to receive additional compensation for such non-investment banking services provided to this issuer. The non-investment banking services provided to the issuer includes the preparation of this report, investor relations services, investment software, financial database analysis, organization of non-deal road shows, and attendance fees for conferences sponsored or co-sponsored by Zacks SCR. The fees for these services vary on a per-client basis and are subject to the number and types of services contracted. Fees typically range between ten thousand and fifty thousand dollars per annum. Details of fees paid by this issuer are available upon request.

POLICY DISCLOSURES

This report provides an objective valuation of the issuer today and expected valuations of the issuer at various future dates based on applying standard investment valuation methodologies to the revenue and EPS forecasts made by the SCR Analyst of the issuer's business.
SCR Analysts are restricted from holding or trading securities in the issuers that they cover. ZIR and Zacks SCR do not make a market in any security followed by SCR nor do they act as dealers in these securities. Each Zacks SCR Analyst has full discretion over the valuation of the issuer included in this report based on his or her own due diligence. SCR Analysts are paid based on the number of companies they cover. SCR Analyst compensation is not, was not, nor will be, directly or indirectly, related to the specific valuations or views expressed in any report or article.

ADDITIONAL INFORMATION
Additional information is available upon request. Zacks SCR reports and articles are based on data obtained from sources that it believes to be reliable, but are not guaranteed to be accurate nor do they purport to be complete. Because of individual financial or investment objectives and/or financial circumstances, this report or article should not be construed as advice designed to meet the particular investment needs of any investor. Investing involves risk. Any opinions expressed by Zacks SCR Analysts are subject to change without notice. Reports or articles or tweets are not to be construed as an offer or solicitation of an offer to buy or sell the securities herein mentioned.