Zacks Small-Cap Research

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Stellar Biotechnologies (SBOT-NASDAQ)

SBOT: Neovacs Ph 2 Lupus Study Completes Enrollment. Read-Out Q2 2018

We forecast revenue in "phase 1" of our model to grow from about $1.2M in fiscal 2016 to $2.9M in 2018. And then in "phase 2" to grow to almost $67M in 2026. Our DCF model, which uses a 12% discount rate and 2% terminal growth rate, values SBOT shares at approximately $6.00.

Current Price (09/01/17)	$1.19
Valuation	**$6.00**

OUTLOOK

Revenue remains relatively insignificant and while also below our estimate, we remind investors that we had and continue to expect relatively limited top-line numbers over the near-term, reflecting expectations that supply agreements with clinical trial customers account for the bulk of sales. Although we do expect some revenue growth related to progression of customers' clinical trials to later stages (for example, OBI recently moving into phase III), an eventual supply agreement for a commercialized product (potentially such as Neovacs' IFNa-Kinoid candidate) would likely significantly steepen the revenue curve. While Q3 revenue was the lowest in 13 quarters, it is important to keep this in the context that there will be variability in demand based on snapshots of activity of SBOT's clinical trial customers. As such, periods of relative weakness in revenue should not be interpreted as being representative of operational progress or future growth. More significant, however, is the progression of the clinical programs Stellar supports as this represents potential future revenue growth.

SUMMARY DATA

52-Week High	**$3.00**
52-Week Low	**$1.05**
One-Year Return (%)	**-53.65**
Beta	**0.42**
Average Daily Volume (sh)	**22,088**
Shares Outstanding (mil)	**11**
Market Capitalization ($mil)	**$13**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**0**
Insider Ownership (%)	**6**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**29.8**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2017 Estimate	**N/A**
P/E using 2018 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**Above Avg.,**
Type of Stock	**Small-Value**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Dec)	Q2 (Mar)	Q3 (Jun)	Q4 (Sep)	Year (Sep)
2016	0.5 A	0.3 A	0.2 A	0.3 A	1.3 A
2017	0.1 A	0.1 A	0.0 A	0.1 E	0.4 E
2018					3.4 E
2019					4.1 E

Earnings per Share

	Q1 (Dec)	Q2 (Mar)	Q3 (Jun)	Q4 (Sep)	Year (Sep)
2016	-$0.19 A	-$0.10 A	-$0.14 A	-$0.13 A	-$0.57 A
2017	-$0.15 A	-$0.11 A	-$0.12 A	-$0.14 E	-$0.51 E
2018					-$0.59 E
2019					-$0.62 E

Zacks Projected EPS Growth Rate - Next 5 Years % **N/A**

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WHAT'S NEW…

Q3 2017 Financial Results

Stellar reported financial results for their fiscal 2017 third quarter ending June 30th. Revenue was again meager and, while below our estimate, we continue to remind investors that we had and continue to expect relatively limited top-line numbers over the near-term, reflecting expectations that supply agreements with clinical trial customers account for the bulk of sales. Although we do expect some revenue growth related to progression of customers' clinical trials to later stages (for example, OBI recently moving into phase III), an eventual supply agreement for a commercialized product (potentially such as Neovacs' IFNa-Kinoid candidate) would likely significantly steepen the revenue curve.

Q3 revenue was $21k (vs. $341k estimate), with all coming from product sales. While this is down 89% yoy (from $181k) and 68% sequentially (from $63k) and the lowest top-line number in 13 quarters, it is important to keep this in the context that there will be variability in demand based on snapshots of activity of the clinical trials and other development programs that Stellar supports. As such, periods of relative weakness in revenue should not be interpreted as being representative of operational progress or future growth potential.

For example, periods between conclusion of a phase II and commencement of a subsequent phase III study can create lulls in KLH demand and related revenue. More significant, however, is the progression of the clinical program as it represents potential future revenue growth for SBOT given larger patient enrollment as well as increasing the chance that the drug candidate eventually reaches commercialization.

Both product income and total gross income were in the red in Q3 (as well as in Q2). While gross margin averaged approximately 11% in 2016, periods of relatively low revenue, such as what we have seen throughout the first nine months of 2017, mean that direct costs related to aquaculture may not be fully absorbed. Gross income will go back in the black with more meaningful revenue levels.

And while revenue missed our number in each of the first three quarters of fiscal 2017, this has been more than offset by operating expenses coming in well below what we had anticipated. Operating expenses have averaged just $1.2M per quarter in 2017, slightly below the $1.3M average throughout 2016 and well below our $1.5M estimate. However, we still do expect operating expenses to increase over the near-term as a result of the recent addition of professional personnel as well as additional activities related to preparations to scale-up production in anticipation of increased demand for the company's KLH. Over the mid-term, we expect at least a portion of the additional spend to be offset by revenue growth and gross margin expansion.

Q3 net loss and EPS were $1.2M and ($0.12), inline with our $1.2M and ($0.12) estimates. Through the first nine months of fiscal 2017 net loss and EPS were $3.8M and ($0.38), compared to $3.7M and ($0.44) in the comparable year-earlier period. Cash balance (including liquid investments) was $7.7M at quarter end, down from $8.6M at the end of Q1 (3/31/17). SBOT used $0.9M and $3.6M ($1.2M and $3.6M ex-changes in working capital) of cash for operating activities in the three and nine months ending 6/30/17, respectively. Another $74k and $200k was used in those same periods for capital purchases (i.e. PP&E).

Operational Highlights:

Recent highlights on the operational front include

- Enrollment of Neovacs' Phase IIb Lupus study completed in July
- Neovacs shooting for data read-out in Q2 2018 (slipped from later in 2017)
- AXON's Phase II Alzheimer's study completed enrollment in July 2017

- …in early March 2017 SBOT announced that they entered an exclusive multi-year agreement with **Amaran Biotechnology** whereby Stellar will supply KLH for Amaran's partners (i.e. OBI's) clinical trials. While this came as little surprise given the prior two-year collaboration agreement between the two relative to optimizing Amaran's manufacturing processes for the OBI-822 candidate and our expectation that SBOT would remain the KLH supplier to Amaran/OBI, it was nonetheless important as it makes it 'official'. The agreement, per Stellar's press release, commits Amaran to purchase Stellar KLH in amounts necessary to meet its requirements for vaccine production. As we explain below, we continue to

eagerly await updates on OBI's clinical programs, the most recent public information surrounding which were announced in January 2017.

As a reminder, OBI's lead candidate, OBI-822 (Adagloxad Simolenin), had been in mid-to-late stage clinical testing in the U.S., S. Korea, India, Hong Kong and Taiwan for the treatment of metastatic breast cancer. It was also in a phase II physician-initiated clinical trial in Taiwan for the treatment of ovarian cancer (no recent updates have been announced related to the ovarian cancer program either). OBI-822 utilizes KLH as a carrier protein for the carbohydrate antigen Globo-H, which is often expressed by cancer cells.

In February 2016 OBI announced that top-line data of the phase 2/3 metastatic breast cancer study did not meet the primary endpoint of progression-free survival. Results were presented in June at ASCO 2016 in Chicago. But, as patients who did show an immune response demonstrated statistically significant progression-free survival versus placebo, coupled with the secondary endpoint of overall survival trending towards statistical significance and no safety issues reported, OBI noted in their February 2016 press release that they expected to forge ahead with a phase III study. **Then in a January 20, 2017 press release OBI announced that they met with the FDA for its end-of-phase II meeting and "based on the discussion with the FDA, OBI Pharma plans to prepare its phase III protocol". Just days later (January 24) OBI announced that they received approval from the China FDA to conduct a phase III clinical trial of OBI-822 which OBI notes can be used in a future BLA application.**

These announcements regarding moving into phase III in China and submitting phase III protocol to U.S. FDA was somewhat surprising given the missed endpoints in phase 2/3. While the status of OBI's clinical programs is unclear (given OBI has not provided public updates since January 2017), if and when there is additional forward progress, it should provide more insight into related potential incremental revenue to Stellar given the recently consummated exclusive multi-year KLH-supply agreement with Amaran (for OBI's studies). In addition to these breast cancer studies, OBI-822 is also in a phase 2 study for ovarian cancer.

- **Neovacs** announced in early February 2017 that they will pursue a Type I diabetes program for their IFNa-Kinoid compound. This is in addition to the ongoing Lupus program (currently in phase IIb) for which SBOT has been supplying KLH. Neovacs made the decision to pursue Type I diabetes following positive results of a mouse model indicating high immunogenicity of IFNa-Kinoid. Similar to Lupus, Type I diabetes is an autoimmune disease characterized by the overexpression of IFNa. Neovacs expects to have additional preclinical proof-of-concept data in Type I diabetes later this year and hopes to commence clinical studies for that indication next year.

  Assuming this program continues to successfully move forward, we would expect SBOT would be supplying KLH for these Type I diabetes studies as well. U.S. prevalence of Type I diabetes is estimated at approximately 2M people, slightly more than the ~1.5M Americans believed to have Lupus. So while it is much too early to make any assumptions regarding the potential additional demand for KLH that a commercialized Type I diabetes immunotherapy may generate, it is worth recognizing that the patient population and potential future opportunity for SBOT is sizeable.

  And, as a reminder, Neovacs has also made significant recent progress in their Lupus program. In 2011 IFNa-Kinoid completed a phase I/IIa study (n=28) for Lupus. Results showed IFNa-Kinoid was well tolerated and patients experienced a strong immune response with a significantly higher production of binding antibodies compared to TNF Kinoid in humans. A phase IIb study, which had originally expected to include approximately 166 patients and began patient enrollment in September 2015, has been ongoing in Europe, Latin America and Asia. In April 2016 Neovacs received IND approval from FDA to extend the study to the U.S. which also prompted an increase in total enrollment to 178 patients (in 21 countries) and expanded the number of sites from 5 to 15.

  On November 7, 2016 Neovacs announced that they enrolled the first patient in the U.S. and also noted that they were seeing strong interest from a large number of U.S. clinical sites. **Importantly, in December 2016 Neovacs announced that FDA granted Fast-Track status to this IFNa-Kinoid Lupus candidate.** Fast-Track is granted to candidates that address serious diseases which are not well controlled with existing therapies. Fast-Track, which aims to facilitate faster time to approval, allows for seamless cooperation with FDA as well as priority review. As such, this could facilitate eventual approval

in the U.S. market. In February 2017 the study's Independent Data and Safety Monitoring Board (IDSMB) issued a favorable safety-related opinion, allowing the study to continue. Most recently, in July 2017, Neovacs received an updated opinion from the IDSMB - again receiving a positive review with no safety concerns and no modifications to the study. The study was fully enrolled as of July. While Neovacs had previously hoped to have results later in 2017, that timeline has now slipped to Q2 2018.

While we do not think commercialization for Lupus in the U.S. is likely to happen within the next few years, it's possible that a Lupus indication could be a sooner event in S. Korea. In mid-April 2016 Neovacs announced S. Korean health authorities approved an IND for their phase IIb lupus study. Importantly S. Korea is the only OECD country in which lupus is considered an orphan disease. As such Neovacs expects to file for orphan designation, granting of which could mean Neovacs may be able to launch IFNa-Kinoid commercially in S. Korea without the need to conduct a phase III study. Neovacs has already started preparing for a potential commercial launch by partnering with Chong Kun Dan Pharmaceuticals, a S. Korean pharmaceutical (immunotherapies) company.

Neovacs continues to expand the potential geographic footprint for their Lupus candidate and in July signed an exclusive licensing agreement with Centurion Pharma whereby that company will lead development and commercialization of the compound in Turkey.

And there are other signs of Neovacs' confidence in their Lupus candidate as the company has made other recent preparations to scale up production. This includes the November 2016 announcements that they acquired interferon alpha manufacturing technology (from Amegabiotech) and signed a production partnership (with 3P Biopharmaceuticals) for the manufacture of interferon alpha. These agreements put in place an important piece for Neovacs to be able to manufacture IFNa-Kinoid in commercial scale.

Neovacs is also developing IFNa-Kinoid for dermatomyositis, which is considered an orphan disease in both the U.S. and in Europe. The dermatomyositis program commenced in mid-2015. Neovacs presented an update of its ongoing phase 2a study at the World Conference on Myositis in May 2017. The phase 2a study (n=30) is evaluating the immunogenicity, tolerance and biological and clinical efficacy of IFNα Kinoid. Results are expected to support design of a pivotal study.

Stellar/Neovacs also recently expanded the supply agreement to ensure sufficient KLH quantities are available to support these upcoming studies as well as a potential future commercial launch. In addition, the agreements call for Neovacs to pay Stellar for maintaining a dedicated colony of limpets. Neovacs accounted for 10% of SBOT's total 2016 revenue but with additional clinical activity as well as potential preparations towards launch, we think this will increase.

Neostell (see Appendix for JV details), the JV formed between Stellar and Neovacs will produce and commercialize Neovacs' vaccines, assuming eventually approved. Neostall will also seek to supply and manufacture KLH-based products for third parties.

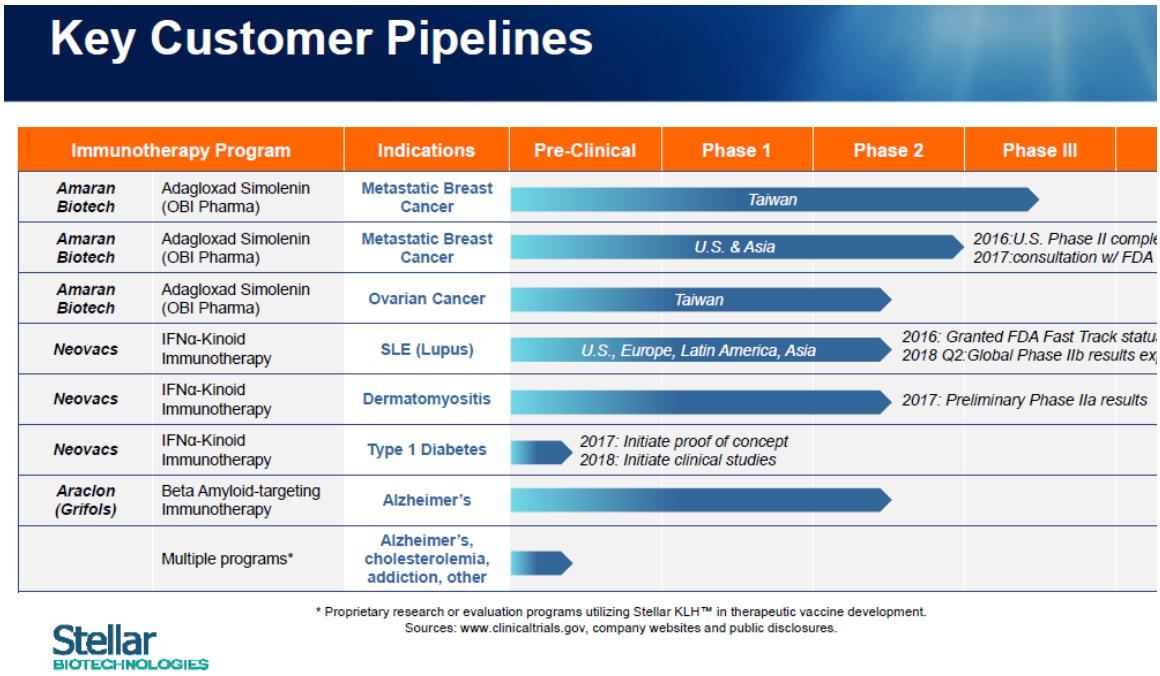
- **Araclon:** Per a November 2014 agreement, Stellar will supply Araclon with KLH to support their phase II/III clinical trials for their Alzheimer's candidate. Upon eventual commercialization, Stellar will also have the opportunity to supply KLH for commercial production. In August 2016 Araclon (and partner Grifols) announced positive results from a Phase 1 (n=24) safety study of their ABvac40 (short C-terminla peptide conjugated to KLH with alum) Alzheimer's candidate which showed no difference in adverse effects between patients treated with ABvac40 (n=18) and those given placebo (n=6). A Phase II study is planned.

- **AXON Neuroscience:** As a reminder, in November 2015 AXON Neuroscience (private) presented positive phase I data on its Alzheimer's disease active vaccine candidate, AADvac1, at the annual International Trials on Alzheimer's Disease Conference (CTAD) in November. AADvac1, which utilizes KLH as a carrier protein, is being developed to generate specific antibodies against diseased forms of tau protein. The presentation at CTAD showed AADvac1 to be safe, well tolerated and induced a "robust response in the vast majority of the study participants and the average cognition of patients remained stable over 6 months." Results were published in December 2016 in Lancet Neurology.

  And while AXON's announcement did not specify where they source their KLH, it appears that it may be from Stellar (we asked on the Q4 2015 conf call but due to confidentiality agreement mgmt. could not confirm) given that revenue from AXON contributed ~$120k in fiscal 2015. A phase II study (titled

ADAMANT), designed to confirm phase I results in a larger population, commenced in June 2016. ADAMANT is a 24-month, randomized, placebo-controlled, parallel group, double-blinded, multi-center study to assess the safety and efficacy of AADvac1 in patients with mild Alzheimer's disease. The primary objective is to confirm the positive Phase I results. Enrollment (n=208) completed in July 2017. While we cannot confirm that SBOT has supplied KLH to AXON in the past (although it appears that was the case) or is doing so for this Phase 2 study, AXON could represent another source of supply revenue and, potentially, eventually commercialized-product revenue.

Stellars' June 2017 Investor Presentation



Building Capacity to Meet Expected Increase in Demand…

SBOT continues to forge further ahead with building its production, manufacturing and capacity capabilities in anticipation of increasing demand for its KLH. Management recently noted that their goal is to have the capacity and operational infrastructure in place to be able to support multiple commercial launches of KLH-based therapies and in late (calendar) 2016 began putting the pieces in place to be able to do so within an approximate two-year timeframe. In December 2016 the company commenced a plan to optimize their protein manufacturing processes in their U.S.-based (California) facility, including evaluating their needs for new equipment – while the current manufacturing system is designed around supporting clinical trials, the optimization plan will be aimed at upgrading this for increased capacity to meet greater demand, such as for a commercialized product.

Most recently their scale-up activities have included the formation of a **Mexican subsidiary** (BioEstelar, S.A. de C.V.) headquartered in Endenada, Baja California, Mexico. BioEstelar's focus will be the (potential, at least as of now) establishment of a second aquaculture facility. As a reminder, In June 2015 Stellar entered an agreement with Ostiones Guerrero S.A. de C.V., a Baja California based commercial shellfish aquaculture and fishing organization aimed at expanding Stellar's KLH aquaculture operations. Stellar is leasing undeveloped land from Ostiones and the duo, contingent on findings from a three-year suitability study, will develop marine aquaculture facilities. This would increase Stellar's KLH production capacity as well as provide production and KLH-sourcing redundancy to the company's U.S. aquaculture facility.

Stellar noted that they have now begun quality studies of the KLH produced in Mexico. These studies include confirmation that the Mexico-produced KLH is comparable to that produced in their U.S. facility. Verification of comparability is critical in order to meet FDA quality guidelines. And redundancy – having two separate production facilities – is beneficial not only for the additional capacity but also in significantly reducing risk of production delays or stoppages due to unforeseen events.

Capacity, redundancy and ability to quickly scale production are also potentially very significant competitive advantages in our opinion as they reduce vaccine manufacturers' supply-constraint risk – a risk that can be substantial given that it takes approximately five years for the Giant Keyhole Limpet to fully mature from embryo to a protein-producing adult. As such, we think additional production and redundancy can be a major selling point for SBOT in not only attracting additional supply agreements but also, potentially, even in helping to further validate the practicality of developing and commercializing KLH-based vaccines (i.e. supply risks will not be a concern).

VALUATION

Financial Model

There are inherent difficulties in building a financial model for Stellar given the various unknowns – while we think near-term revenue will be mostly driven by the already established relationships, the biggest unknowns relate to what to anticipate in terms of future collaborations and supply agreements in support of additional clinical trials and, eventually, to supply KLH for commercialized products. As such, our modeled revenue incorporates two general assumptions; the first (bottom-up approach) that revenue over the next few years comes mostly from already established relationships and the second (top-down approach), that by (fiscal) year 2021 (updated from prior-assumed 2020) Stellar begins to generate meaningful revenue from supplying KLH to commercialized immunotherapies.

Through the year 2018 over 90% of our modeled revenue relates to contract services and product sales to Stellar's existing customers (most of the remaining ~10% of modeled revenue comes from assumed new service contracts). Our assumptions include that the various supported candidates including IFNa-Kinoid, OBI-822 and Araclon's Alzheimer's candidate successfully complete current clinical trials and progress to later stages. While we assume larger trials require greater quantities of KLH and generate additional services revenue, we also incorporate a revenue haircut to account for the risk of failure - this includes a 60% haircut that a candidate will progress from Ph II to Ph III and a 80% haircut that a Ph III candidate will eventually gain FDA approval. Our chosen haircuts are based on literature about immunotherapy clinical trial and regulatory approval failure rates as well as more recent outcomes.

Given that there is no way to know what additional customers may come onboard, our second phase of modeled revenue, which begins to make a meaningful contribution in year 2021, is based on the overall estimated market for KLH in immunotherapy applications. Key assumptions to our top-down model for the second phase include (see our chart below as well);

Annual Market Opportunity Assumptions

- Stellar sells bulk GMP KLH for approximately $50k/gram (equal to $0.05/microgram). Stellar has publicly disclosed this pricing
- Approximately 500 – 700 micrograms (mg) of KLH are used in each vaccine dose – which is based on our due diligence
- Nine doses per patient – which is consistent with cancer vaccine dosing expectations
- 30% - 75% additional KLH required for manufacturing waste, pilot runs, inventory, etc
- Multiply annual U.S. incidence rates of major cancers and other select diseases where KLH is generating interest (including some autoimmune diseases) by cost/per KLH dose. This calculates to a U.S. market worth ~$1.3B
- Assume ex-U.S. market is approximately the same size as U.S. but attainable OUS market is only about 50% as big. Calculates to a WW Mrkt = ~$2.0B
- Assume the market grows at a CAGR of 3% over the next 10 years. This calculates to a total market opportunity of $2.7B in the year 2026

Haircut Assumptions

- Immunotherapies account for 45% of all cancer (and select other disease) treatments in 10 years
- 50% of these immunotherapies use a carrier protein
- 30% of these immunotherapies that use a carrier protein use KLH as that carrier
- Stellar supplies one-third (33%) of this KLH
- This equates to product sales for Stellar of approximately $67 million in the year 2026
- We discount this back at 50% per year through fiscal 2019

Additional Comments

- Our calculated total market size is arguably conservative as it is based on only some cancers (albeit all of the most common) and a select number of other diseases. Other diseases with high prevalence rates such as the autoimmune disease, psoriasis, which afflicts as many as 10M Americans, were not included in our estimates as immunotherapies have mostly focused on cancer and only a handful of other diseases. However, we think it is likely that research will broaden to a much greater spectrum of diseases
- Our assumption that 50% of all cancers are treated with immunotherapies is more conservative than the 60% that at least one industry analyst expects

- Our 50% of all immunotherapies using KLH as the carrier protein may also be conservative as KLH is quickly becoming the carrier protein of choice
- Our model assumes one-third of KLH is supplied by Stellar. The only substantive competition today is biosyn but Stellar is the only KLH manufacturer that can rapidly and reliably ramp production. Their additional capacity (from the Ostione's facility) could be online in the coming years. As such, our assumed 33% supply coming from Stellar may also be low
- Also of interest is that Stellar's current annual capacity of 2.0kg would be sufficient to supply what we calculate as their total estimated revenue in the year 2026. Stellar's interest in significantly expanding their capacity with the Ostiones facility may indicate that they believe their revenue potential far exceeds our estimates - and given that they are closer to the industry and what to anticipate relative to future KLH demand, this also may imply that our forecasts are conservative

		KLH		
Cancer	**Annual U.S. Incidence**	**mcg/patient**	**$/mcg**	**Annual U.S. Mkt Opport.**
Breast Cancer	234,000	9,000	$0.05	$105,300,000
Oral	46,000	9,000	$0.05	$20,700,000
Melanoma	74,000	9,000	$0.05	$33,300,000
Kidney	62,000	9,000	$0.05	$27,900,000
Prostate Cancer	233,000	9,000	$0.05	$104,850,000
Uterine/Ovary Cancer	96,000	9,000	$0.05	$43,200,000
Urinary	139,000	9,000	$0.05	$62,550,000
Lung Cancer	224,000	9,000	$0.05	$100,800,000
Colorectal Cancer	137,000	9,000	$0.05	$61,650,000
Other digestive	150,000	9,000	$0.05	$67,500,000
Sarcoma	15,000	9,000	$0.05	$6,750,000
Leukemia	54,000	9,000	$0.05	$24,300,000
Bladder Cancer	74,000	9,000	$0.05	$33,300,000
Multiple Myeloma	24,000	9,000	$0.05	$10,800,000
Lymphoma	81,000			
-Non-Hodgkins Lymphon	72,000	9,000	$0.05	$32,400,000
Thyroid	65,000	9,000	$0.05	$29,250,000
Brain / Tumors	68,000			
-Glioblastoma Brain Cncrs	24,000	9,000	$0.05	$10,800,000
	1,723,000			**$775,350,000**
Other diseases				
Lupus	20,000	9,000	$0.05	$9,000,000
Alzheimer's Disease	500,000	9,000	$0.05	$225,000,000
Clostridium difficile	450,000	9,000	$0.05	$202,500,000
Crohn's Disease	35,000	9,000	$0.05	$15,750,000
Psoriatic Arthritis	23,000	9,000	$0.05	$10,350,000
Rheumatoid Arthritis	230,000	9,000	$0.05	$103,500,000
	1,258,000			**$566,100,000**
Total U.S. Market				$1,341,450,000
Assumed Attainable OUS Market (50% of U.S.)				$670,725,000
Total WW Market Today (pre haircuts)				**$2,012,175,000**
WW Market in 10 years (3% CAGR)				**$2,704,194,941**
Haircut Assumptions:				
Immunotherapies as % of cancer & select other disease therapies				50%
% of immunotherapies that use a carrier protein				50%
% of future immunotherapies that use KLH as carrier protein				30%
% of KLH that is supplied by Stellar				33%
Total Stellar revenue in 10 years				**$66,928,824.78**
Required KLH Production Capacity (kg)				**1.3**

DCF Values SBOT at $6/share

We forecast revenue in "phase 1" of our model to grow from about $1.3M in fiscal 2016 to $2.9M in 2018. And then in "phase 2" to grow to almost $67M (updated from $71M previously) in 2026. Our 2026 revenue figure includes KLH sales in support of commercialized immunotherapies as well as some contribution for supply of clinical trials, in addition to a much relatively smaller revenue stream from service contracts. As detailed above, the bulk of our forecasted growth of longer-term revenue is driven by the expected explosive growth of immunotherapies and cancer vaccines, coupled with the Stellar's rise as the leading KLH supplier.

Our DCF model, which uses a 12% discount rate and 2% terminal growth rate, values SBOT at approximately $6/share.

Appendix

Details of Neostell S.A.S. include:

- located in Paris, France
- SBOT holds 30% equity interest and will initially contribute €120,000 (~$134k), 50% of which has already been paid with the remainder payable upon "occurrence of certain defined future events" (which is interpreted to mean, 'positive results of Neovacs' IFNa-Kinoid phase II lupus study')
- additional future funding will be on a pro rata basis (i.e. SBOT 30%, Neovacs 70%)
- "If the joint venture does not achieve certain milestones by December 2017, the joint venture will be dissolved, unless (i) the parties mutually agree to pursue the joint venture arrangement, or (ii) either party decides to purchase the equity interests of the other party. Each of the parties is entitled, upon the occurrence of certain defined events, to acquire the interest of the other party" (copied from Q3 10-Q)
- "In connection with the formation of the joint venture and the performance of its goals and projects, the parties and the joint venture agreed to enter into (a) an exclusive supply agreement within a limited field of use for the Company to supply KLH to the joint venture, (b) a supply agreement designating the joint venture as the exclusive manufacturer and supplier of the other party's vaccines, and (c) services agreements for the provision of various knowledge and expertise by each of the parties to the joint venture. The other party will also license certain of its intellectual property to the joint venture
- "The joint venture has an initial ten-year term, renewable for successive five-year terms. If either party provides notice at least six months prior to the expiration date of an applicable term that it does not wish to continue the joint venture transaction, the other party will have a right to acquire all of such terminating party's equity interests in the joint venture"
- Per Neovacs' Jan 21st press release announcing the collaboration, Neostell is expected to hire between 50 and 100 employees

We view this JV as another endorsement for the quality and sustainability of the source of KLH that SBOT provides. It also provides the opportunity for SBOT to participate in the full product cycle from supply, manufacturing and sales – which broadens the scope and breathe of SBOT operations and revenue opportunities. And finally, we think this JV is another step in progress towards exploiting the expected rapid growth of immunotherapies, superiority of KLH as a carrier protein and SBOT's position as the only company in the world capable of supplying commercial-scale quantities of the high quality KLH protein.

Stellar Biotechnologies

	2016 A	Q1 A	Q2 A	Q3 A	Q4 E	2017 E	2018 E	2019 E
Total Revenues	$1,271.7	$141.9	$63.0	$20.5	$122.0	$347.4	$2,890.6	$3,791.4
YOY Growth	*67.6%*	*-70.9%*	*-80.7%*	*-88.7%*	*-55.8%*	*-72.7%*	*732.1%*	*31.2%*
Cost of Sales	$1,128.0	$163.4	$134.8	$142.3	$171.6	$612.1	$2,184.4	$2,634.5
Gross Income	$143.7	($21.5)	($71.8)	($121.7)	($49.6)	($264.7)	$706.2	$1,156.8
Gross Margin	*11.3%*	*-15.2%*	*-114.0%*	*-592.9%*	*-40.7%*	*-76.2%*	*24.4%*	*30.5%*
R&D	$1,729.5	$460.9	$329.4	$536.2	$627.6	$1,954.0	$3,358.0	$3,661.0
% R&D	*136.0%*	*324.9%*	*522.7%*	*2611.4%*	*514.4%*	*562.5%*	*116.2%*	*96.6%*
SG&A	$3,322.7	$932.1	$746.4	$635.7	$768.0	$3,082.1	$4,118.0	$4,555.0
% SG&A	*261.3%*	*657.1%*	*1184.3%*	*3096.2%*	*629.5%*	*887.2%*	*142.5%*	*120.1%*
Operating Income	($4,908.5)	($1,414.5)	($1,147.6)	($1,293.6)	($1,445.2)	($5,300.9)	($6,769.8)	($7,059.2)
Operating Margin	*-386.0%*	*-997.1%*	*-1821.0%*	*-6300.5%*	*-1184.6%*	*-1525.8%*	*-234.2%*	*-186.2%*
Total Other Inc. (Exp.)	($110.5)	($70.4)	$43.9	$73.3	$5.2	$51.9	$0.0	$0.0
Pre-Tax Income	($5,019.0)	($1,484.9)	($1,103.7)	($1,220.4)	($1,440.0)	($5,249.0)	($6,769.8)	($7,059.2)
Taxes	$7.2	$0.8	$0.0	$0.0	$0.0	$0.8	$0.0	$0.0
Tax Rate	-	-	-	-	-	-	-	-
Net Income	($5,026.2)	($1,485.7)	($1,103.7)	($1,220.4)	($1,440.0)	($5,249.8)	($6,769.8)	($7,059.2)
YOY Growth	*76.8%*	*-8.8%*	*28.2%*	*1.4%*	*8.1%*	*4.4%*	*29.0%*	*4.3%*
Net Margin	*-395.2%*	*-1047.3%*	*-1751.3%*	*-5943.7%*	*-1180.4%*	*-1511.1%*	*-234.2%*	*-186.2%*
EPS	($0.57)	($0.15)	($0.11)	($0.12)	($0.14)	($0.51)	($0.59)	($0.60)
YOY Growth	*59.4%*	*-24.7%*	*6.8%*	*-15.6%*	*3.1%*	*-9.9%*	*14.8%*	
Diluted Shares O/S	8,826	10,136	10,136	10,153	10,515	10,235	11,500	11,700

Brian Marckx, CFA

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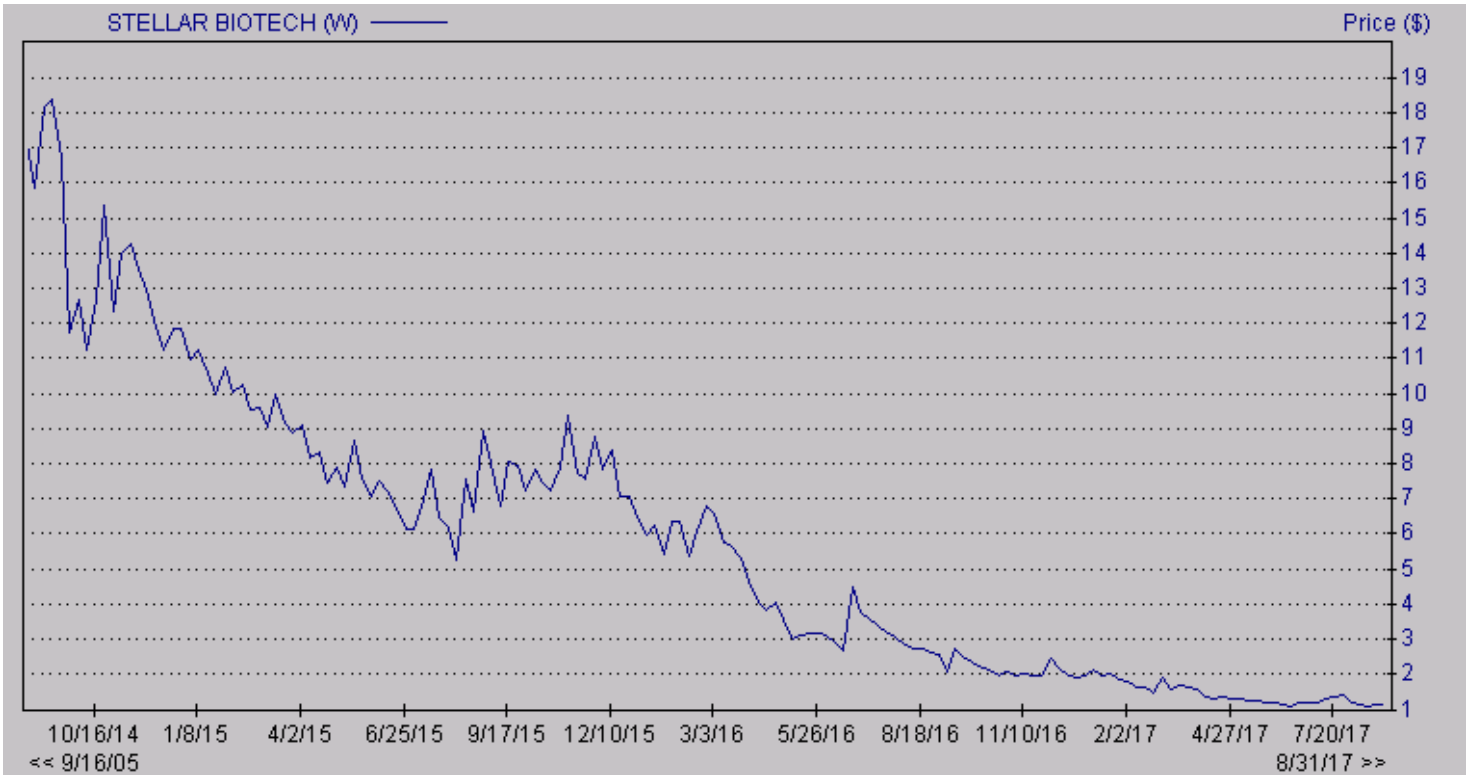

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