Siena Market Line
2nd week of December 2015

Cellectis S.A.

NASDAQ:CLLS (ADS)

Analyst: Arthur Jeannerot
Sector: Healthcare

BUY

Price Target: $48

Key Statistics as of 12/06/2015

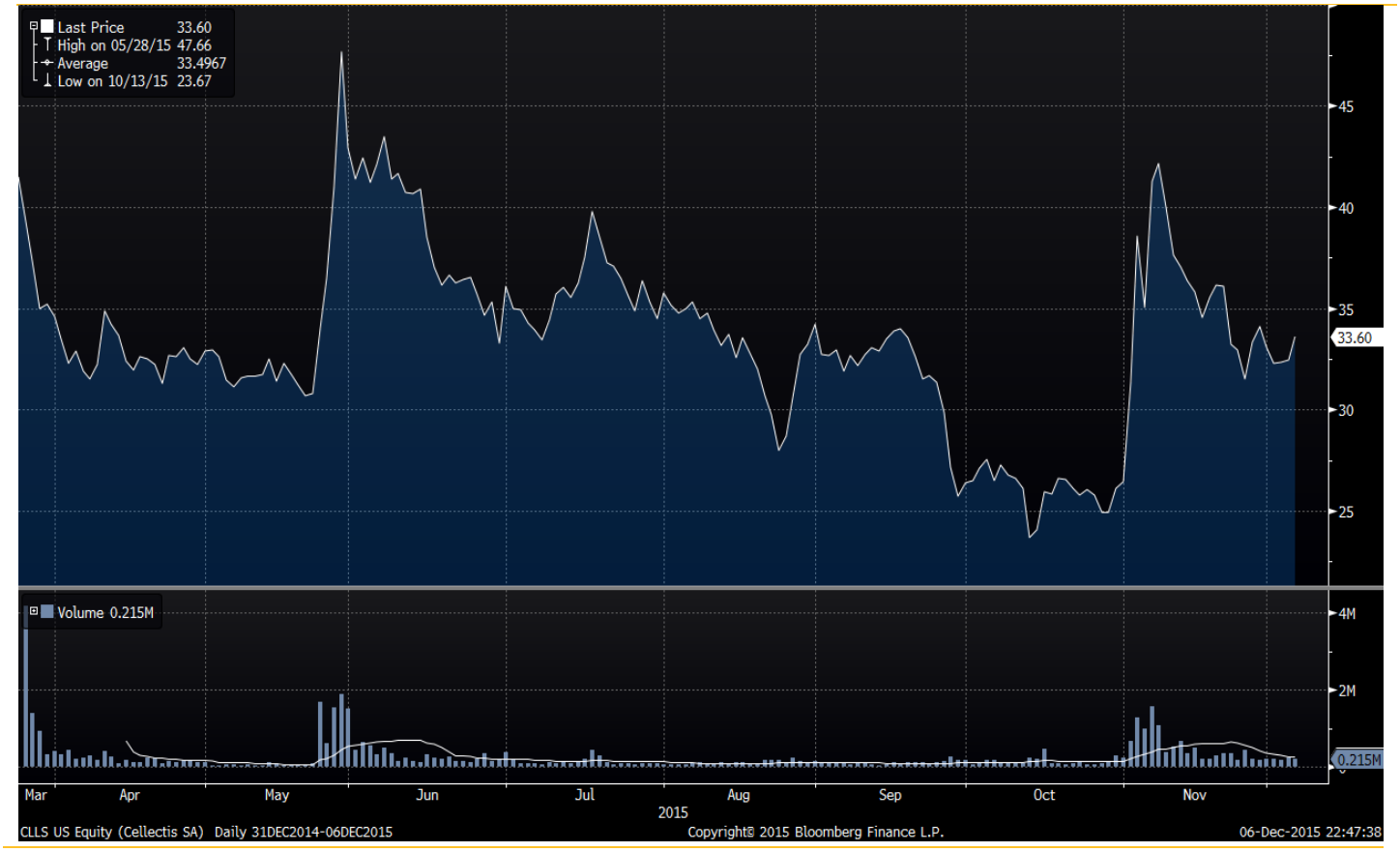
Market Price:	$33.6
Industry:	Biotechnology
Market Cap:	$1.18B
52-Week Range:	$23.52-$50
Beta:	0.5

Thesis Points:

- Cellectis is a leader in genome engineering, with 16 years of experience and alliances with Pfizer (PFE) and Servier.
- The company's main focus is the development of innovative cancer therapies.
- If early clinical trials are successful, Cellectis could become a prized acquisition target for large pharmaceutical groups.

Company Description:

Cellectis S.A. is a French biotechnology company specialized in gene-editing with the aim to develop innovative immunotherapies for cancer. Specifically, Cellectis uses its proprietary technology to engineer chimeric antigen receptor T-cells (CAR T-cells) that are then able to attack cancer cells. In addition, the company also works on developing healthier crops through its agricultural biotechnology subsidiary Calyxt. Even though all its products are currently in pre-clinical trial, early clinical data as well as the interest of large pharmaceutical companies for Cellectis' pipeline imply a high probability of success.



Thesis

Cellectis is a leading developer of innovative immunotherapy cancer solutions using gene-edited CAR T-cells. Thanks to its fifteen years of experience, pioneering discoveries, and strong corporate alliances, the company is well positioned to become a provider of best-in-class solutions for the treatment of various forms of cancer. Immuno-oncology is the latest breakthrough in cancer therapy, which currently consists primarily of chemotherapy, radiation therapy, and surgery. Despite their relative effectiveness, those current methods are very destructive, which explains why companies have shifted their research towards what is known as targeted therapy, where the drugs specifically target and destroy the cancer cells without harming healthy cells. The company's oncology pipeline is currently composed of five product candidates, with the most advanced (UCART19) the subject of an alliance with private French pharmaceutical company Servier. In addition, the company has an agreement with Pfizer to develop nineteen more immunotheraphy targets.

Our lead immuno-oncology product candidates

Product name Targeted Indication	Product development	*In Vitro* Studies	*In Vivo* Studies	Manufacturing	CTA/IND filing	Alliance
UCART19 Acute Lymphoblastic Leukemia (ALL) Chronic Lymphocytic Leukemia (CLL)					2015	Servier
UCART123 Acute Myeloid Leukemia (AML) / Blastic Plasmacytoid Dendritic Cell Neoplasm (BPDCN)						Wholly-Owned
UCART38 Multiple Myeloma (MM) / T-cell Acute Lymphoblastic Leukemia (T-ALL)			Q4 2015			Wholly-Owned
UCARTCS1 Multiple Myeloma (MM)			Q4 2015			Wholly-Owned
UCART22 Acute Lymphoblastic Leukemia (ALL)						Wholly-Owned

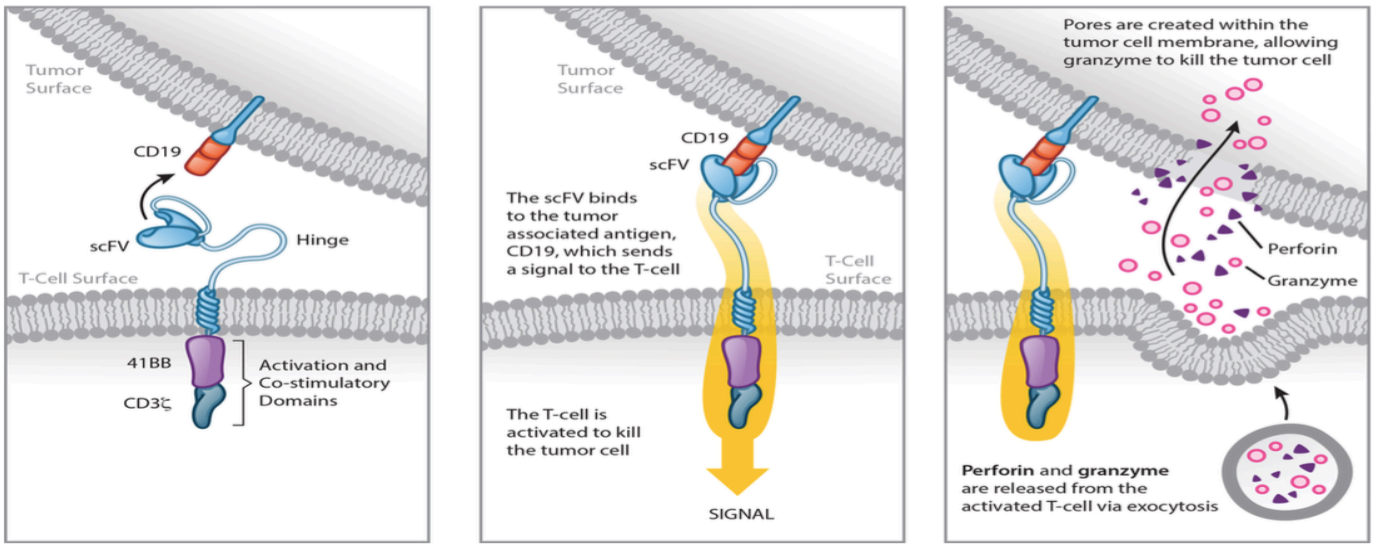
September 2015

History

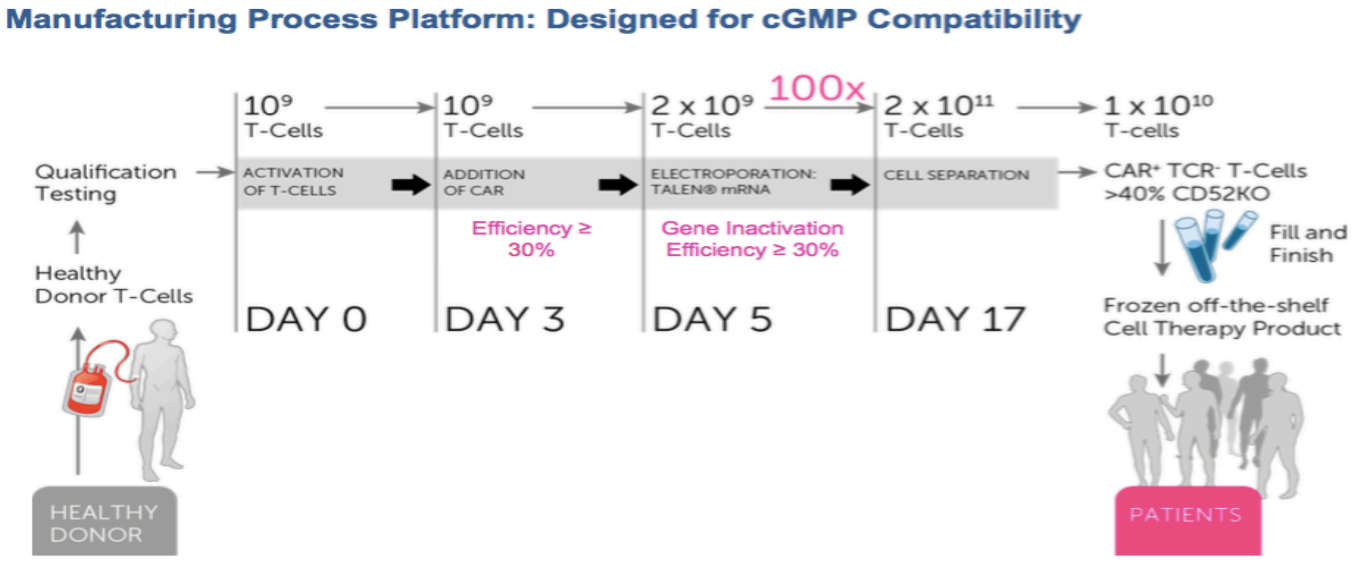
The company was founded in Paris in 1999 by André Choulika, PhD, who still serves as Chairman and CEO. In 2005, the company's research team established proof of the efficacy of its meganucleases, the molecules used in gene-editing. According to the company, this marked the birth of genome engineering, allowing researchers to industrialize a process that was once manual and very unpredictable. Following this success and realizing the growth potentials, the company raised €21.2 million through an IPO on the NYSE Alternext in Paris. During the following years, the company focused on the pre-clinical development of several candidates for cancer treatments, and the heavy investing paid off with very satisfying results. The company also acquired strategic assets, with the acquisition of CytoPulse Inc. in 2010, and an exclusive license to nuclease-related patents from the University of Minnesota. The same year, the company founded its plants division, Cellectis plant sciences, which is now known as Calyxt and is working on creating the next generation of genetically engineered crops. In February 2014, the company entered into a strategic collaboration agreement with Laboratoires Servier, a privately held French healthcare firm with 2014 revenues of €4 billion. The deal brought the company under the spotlight, and in June that year another strategic partnership was sealed, this time with U.S healthcare behemoth Pfizer. The largest partnership ever sealed by a French biotech startup, it allowed the company to gain exposure to the American market, which eventually led to a $228 million IPO on the NASDAQ on March 25, 2015.

CAR T-Cells

To simplify, a Chimeric Antigen Receptor (CAR) is a molecule that enables a cell to target specific antigens in a cancer cell. By associating T-cells, which originate in the immune system, with a CAR that targets specific proteins found in tumor cells, CAR T-cells can attack and destroy cancer cells. Thanks to their targeting abilities, CAR T-cells are becoming the next generation of cancer treatments, which researchers have been trying to improve for decades. Current cancer treatments such as chemotherapy are very destructive, and even though they are better than nothing, they are bound to leave the way to targeted therapies such as immunotherapy. As a result, large pharmaceutical companies are eager to secure alliances with biotech startups such as Cellectis, Juno Therapeutics (JUNO), Kite Pharma (KITE), or Bluebird Bio (BLUE), who also work on CAR T-cell oncology solutions. Below is a schema from the company's latest investor presentation, which shows the mechanism of effect of CAR T-cells.



In order to create those cells, the company has established a manufacturing process based on T-cells from healthy donors. Using its proprietary gene-editing technology TALEN, the company can create billions of frozen, ready-to-use off-the-shelf CAR T-cells per batch of donor cells. This allogeneic manufacturing solution is one of the key strengths in Cellectis' technology, as it makes production successfully scalable. Below is a schema that shows the different steps of the manufacturing process, from Cellectis' latest investor presentation.



Partnerships

Cellectis has sealed major partnerships with two large pharmaceutical firms, on top of collaboration agreements with universities such as the University College of London or the Weill Cornell Medical College in New York. The first strategic alliance was sealed with Servier in February 2014. Servier is a French pharmaceutical company that employs approximately 20,000 people worldwide and generated sales in excess of €4 billion in 2014. The partnership covers the clinical development and potential commercialization of UCART19, Cellectis' leading drug candidate, as well as five other potential candidates in the treatment of solid tumors. The agreement includes a €7.55 million non-refundable upfront payment, and a maximum of €813.3 million in additional development and commercial milestone payments for the six candidates. The deal also gives Servier the option to acquire exclusive worldwide rights on each of the six drug candidates. Two weeks ago, on November 19, Servier exercised this option for UCART19, which is about to enter Phase 1 clinical trials. Under the terms of the amendment, Servier will pay Cellectis $38.2 million for exercising the option, and up to $300 million of additional payments for R&D, development milestones, and royalties on sales. Servier also sealed a collaboration and licensing agreement with Pfizer to develop and commercialize UCART19 together, whereby Pfizer will be responsible for commercialization in the United States. I believe the fact that Servier exercised its option early, and just in time to own the rights to UCART19 before the first clinical trial starts is a strong testament of the company's confidence in the potential for success. It is also very interesting to see Pfizer jumping on the UCART19 bandwagon, since it had missed out on this opportunity in the first place. Instead, Pfizer sealed a partnership with Cellectis for 15 candidates, plus 4 additional candidates for which Cellectis retains worldwide rights. This deal, the largest preclinical alliance obtained by a French biotech, includes an $80 million upfront payment, the sharing of R&D expenses, and up to $185 million of milestone payments for each of the 15 Pfizer target, or $2.8 billion in total, plus royalties on sales. In addition, Pfizer took a 10% equity stake in Cellectis for €25.8 million. The agreement also prevents Cellectis from entering into another preclinical alliance for use of its CAR T-cells in oncology for four years. The scope of this deal, and the fact that it came just a few months after the Servier deal, is a demonstration of the interest of pharmaceutical companies for CAR T-cell-based immunotherapy solutions. Those strategic alliances give Cellectis the necessary resources to advance the development of its drug candidates, and should start generating cash flows in a few years once development milestones are crossed.

Universal Chimeric Antigen Receptor T-cells (UCARTs)

UCARTs are the ready-to-use, "off-the-shelf" CAR T-cells that Cellectis manufactures. Each one of its UCART product candidates is designed to target a specific tumor antigen, and can be engineered with specific attributes to correspond to the patient. UCART19, the company's most advanced candidate, is aimed at the treatment of acute lymphoblastic leukemia (ALL), a cancer of white blood cells which affected more than 80,000 people (mostly children and young adults) in the United States, and chronic lymphocytic leukemia (CLL), which affects around 14,000 people (mostly adults) every year in the U.S. The development of UCART19 will now be in the hands of Servier and Pfizer according to the terms of the recent agreement, which should result in the launch of a Phase I clinical trial in 2016.

UCART123, Cellectis' second leading candidate, is the subject of a research alliance with Cornell University. UCART123 is aimed at the treatment of acute myeloid leukemia (AML), which kills 10,000 people annually in the U.S and affects approximately 20,000 more, with a 5-year survival rate as low as 26%. Like CLL, AML is predominant among older adults, with a median age of 67 at diagnosis. UCART123 is currently in preclinical development and is still fully owned by

Cellectis. Its properties also make it a potential candidate for the treatment of blastic plasmacytoid dendritic cell neoplasm (BPDCN), a rare, incurable form of AML, which affects the skin and bone marrow.

UCART-CS1 and UCART38 are two other drug candidates, developed for the treatment of multiple myeloma or Kahler's disease. Multiple myeloma is the most common form of myeloma (>90% of cases), a cancer of plasma cells that originates in the bone marrow. There are approximately 80,000 people affected by multiple myeloma in the U.S, and around 24,000 new cases per year. Multiple myeloma is currently incurable and the median survival rate for patients is 8 years, with high chances of relapse and tumor resistance. UCART-CS1 is subject to a preclinical and clinical alliance with the MD Anderson Cancer Center in Houston, TX, while UCART38 is being developed solely by Cellectis. The company is also evaluating its potential in the treatment of T-cell acute lymphoblastic leukemia (T-ALL), which is a rare form of ALL. UCART-22, the least advanced of the company's candidates, is still at the *In Vivo* phase, and is being investigated for the treatment of ALL and B-cell malignancies of ALL (B-ALL).

The decision to focus on acute leukemia is strategic, as it is a very aggressive form of cancer with very low survival rates. Current alternatives, despite being better than having no treatments, still fall short for the tens of thousands of patients who die from a form of acute leukemia every year. The choice of genetically engineered CAR T-cells to treat cancer is showing strong potential, as evidenced by the billions of dollars of investment that have been flowing to companies like Cellectis, as well as the very encouraging publications and enthusiasm from the scientific community. Cellectis is therefore positioned as one of the leaders of potential best-in-class treatments for hundreds of thousands of acute leukemia patients worldwide.

Calyxt

Calyxt, formerly known as Cellectis Plant Sciences, is the company's branch that focuses on the development of agricultural biotechnologies, or agbiotech. It was founded in 2010 in St. Paul, MN, based on a platform developed by Cellectis and the University of Minnesota. Calyxt's CEO is Luc Mathis, PhD, who joined Cellectis in 2006 and co-founded Calyxt with Dan Voytas, PhD, who serves as Chief Science Officer (C.S.O). Calyxt's mission is to "develop a novel generation of crops that will help develop food products with more health benefit for consumers" (calyxt.com). The company is currently working on four strategically chosen crops: potatoes, soybeans, wheat, and canola. The company's goal is to develop enhanced crops with particular characteristics, such as low trans-fat soybeans or low gluten wheat. Calyxt's pipeline currently comprises 11 potential products.

Pipeline

Product	Trait	Discovery	Estimated Field Trial			
Soybean	Low trans fat	Done	2015			
	Low linolenic oil	Ongoing		2016		
	Low transfat/low linolenic oil stack	Ongoing			2017	
	Protein content	Ongoing			2017	
Potato	Cold storage	Done	2015			
	Browning reduction	Ongoing		2016		
	Cold storage/Browning reduction stack (fries variety)	Ongoing				2018
	Cold storage/Browning reduction stack (chips variety)	Ongoing				2018
Canola	Improved oil	Ongoing		2016		
	Nitrogen use efficiency	Ongoing				2018
Wheat	Low gluten	Ongoing			2017	

Even though the work is still in the very early stages, it has attracted the interest of Monsanto (MON), BASF, and Bayer CropScience, a subsidiary of German laboratory Bayer. Those companies have all signed licensing agreements with Cellectis in order to be able to use its genome editing technology in their agricultural products. Because of the very early nature of Calyxt's work, I do not include it in my valuation, but it is important to note that it represents a tremendous opportunity and that Calyxt could quickly become an acquisition target if it were to make a breakthrough discovery.

Financials

Thanks to the two partnerships and to the recent IPO on the NASDAQ, Cellectis is in a very comfortable financial position that enables it to continue its intense R&D efforts for several more years, until milestone payments are received. As of September 30, 2015, the company had €279.4 million in cash and equivalents (90% of total assets), up from €112.3 million at the end of fiscal 2014. Operating expenses, including share-based compensation totaled €23.4 million for the quarter and €56.3 million for the first three quarters combined, which implies an annual "burn rate" of approximately €75 million. Research and development accounted for over 50% of operating expenses, at €29.6 million for the nine months ended Sep. 30. For the same period, total revenues were €27.2 million, in comparison with €21.6 million for the 2014 fiscal year. Revenues were primarily derived from the collaboration and licensing agreements with Pfizer and Servier, as well as from government grants and R&D tax credits. This resulted in a quarterly loss of €12.76 million, or €28.6 million for the first three quarters, which brings the total value of the accumulated deficit to €165.9 million. The company also has €43.8 million of deferred revenue related to the upfront payments on its partnerships, which is amortized linearly over the duration of the contract. Cellectis has no long-term debt, and its book value of debt-to-equity was 0.26 as of the end of the third quarter. There are currently 35.1 million shares outstanding, 76% of which are in the hands of institutional investors, strategic holders, and industrial partners, which leaves around 8.4 million in free float.

Conclusion

Cellectis is one of the leaders in CAR T-cell research, and has the resources and potential to bring to market revolutionary treatments that could someday benefit hunderds of thousands of cancer patients. Current cancer therapies, painful and cumbersome, are bound to be replaced by targeted therapies, which are much more effective. Immunotherapy, which refers to the use of the immune system to fight diseases such as cancer, is one of the leading areas of oncology research. Over the last two decades, CAR T-cells have demonstrated impressive abilities in fighting tumors, and as a result several biotechnology companies have focused their research on the development of CAR T-cell-based cancer therapies. In fifteen years, Cellectis has developed an impressive portfolio of intellectual property, including patents, proprietary tools and processes that will allow it to become a full-scale producer of such therapies. Thanks to the strength of its research and commercial partners, the company has the financial, human, and scientific resources to bring its technology to market. However, this will not be the work of a couple years. Like all biotechs, Cellectis does not currently produce or sell anything, and spends significant amounts in research and development, generating losses every year. It will take many more years before the company's products can be brought to market, if they ever reach this stage. It is important to note that despite its promising preclinical results and strategic alliances, the company might never be able to commercialize a single product, and could end up virtually worthless. However, I believe Pfizer's involvement with Cellectis is a vote of confidence in the company's technology, and I think Cellectis could very quickly become an acquisition target, especially for Pfizer, which already owns a 10% stake and would save itself from paying billions in milestone and royalty payments. Like the four analysts who cover the stock, I recommend a buy with a 12-month price target of $48.

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2nd week of December 201

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Cellectis S.A.	NASDAQ:CLLS	Analyst	Current Price	Intrinsic Value	Target Value	Divident Yield	1-y Return: 55.79%	BULLISH
		Arthur Jeannerot	$30.85	$46.03	$48.06	0%		

General Info	
Sector	Healthcare
Industry	Biotechnology
Last Guidance	N/A
Next earnings date	March 31, 2016

Market Data	
Enterprise value	$806.82
Market Capitalization	$4,449.48
Daily volume	0.22
Shares outstanding	35.10
Diluted shares outstanding	32.63
% shares held by institutions	26.01%
% shares held by insiders	15.24%
Short interest	0.00%
Days to cover short interest	0.00
52 week high	$45.66
52-week low	$10.99
5y Beta	0.50
6-month volatility	66.90%

Peers	Market Cap.
Sangamo Biosciences Inc	$640.23
Juno Therapeutics Inc	$5,327.69
Kite Pharma, Inc	$3,112.08
bluebird bio, Inc	$3,068.40
Intrexon Corporation	$3,835.31
ImmunoGen, Inc	$1,151.68
NantKwest, Inc	$1,259.73
Geron Corporation	$800.60
PTC Therapeutics, Inc	$940.80

Current Capital Structure	
Total debt/Common Equity (LTM)	0.04
Cost of Borrowing (LTM)	0.24%
Estimated Cost of new Borrowing	9.56%
Altman's Z	7.78
Estimated Debt Rating	D
Current levered Beta	0.50
LTM WACC	5.99%

Management

Professional	Title	Comp. FY2012	Comp. FY2013	Comp. FY2014
Choulika, André	Co-Founder, Chairman and Chief Executive (	$0	$342,400	$0
Sourdive, David	Co-Founder, Executive Vice President of Cor	$0	$261,800	$0
Moulin, Thierry	Chief Financial Officer	$0	$0	$0
Simon, Mathieu	Chief Operating Officer, Executive Vice Presid	$0	$0	$0
Duchateau, Philippe	Chief Scientific Officer	$0	$0	$0
Harnest, Simon	Vice President of Finance and Investor Relatic	$0	$0	$0

Past Earning Surprises

	Revenue	EBITDA	Norm. EPS	Standard Error of "Surprise"
Last Quarter	39.45%	0.00%	0.00%	13.15%
Last Quarter-1	46.79%	0.00%	0.00%	15.60%
Last Quarter -2	-23.17%	0.00%	0.00%	7.72%
Last Quarter -3	0.00%	0.00%	0.00%	0.00%
Last Quarter -4	0.00%	0.00%	0.00%	0.00%
Standard error	13.2%	0.0%	0.0%	4.37%
Standard Error of Revenues prediction	13.2%			
Imputed Standard Error of Op. Cost prediction	NM			
Imputed Standard Error of Non Op. Cost predictio	0.0%			

Industry Outlook (Porter's Five Forces)

Bargaining Power of Suppliers (100th Percentile), Bargaining Power of Customers (100th Percentile), Intensity of Existing Rivalry (67th Percentile), Threat of Substitutes (100th Percentile), Threat of New Competition (100th Percentile), and Overall (97th Percentil

Proforma Assumptions

Convergence Assumptions

All base year ratios linearly converge towards the Sub-industry ratios over an explicit period of 10 years

General Assumptions

Money market rate (as of today)	0.37%
Risk-Free rate (long term estimate)	2.93%
Annual increase (decrease) in interest rates	0.1%
Marginal Tax Rate	38.0%
Country Risk Premium	7.0%

Items' Forecast Assumptions

	Base year (LTM)	Convergence period (Sub-industry)	Adjustment per year
Operating Cash/Rev.	120.96%	0.00%	-12.1%
NWV/Rev.	0.00%	13.35%	1.3%
NPPE/Rev.	13.84%	20.00%	0.6%
Dpr/NPPE	29.87%	21.05%	-0.9%
NOPAT MARGIN	59.55%	21.50%	-3.8%
Op. Exp./Rev.	128.93%	60.20%	-6.9%
SBC/Rev.	49.87%	2.47%	-4.7%
Rent Exp./Rev.	10.48%	0.72%	-1.0%
R&D/Rev.	70.29%	18.28%	-5.2%
E&D/Rev.	0.00%	0.00%	0.0%
SG&A/Rev.	56.77%	26.80%	-3.0%
ROIC	38%	13.29%	-2.47%
EV/Rev.	15.79x	2.36x	-1.34x
EV/EBITA	54.78x	6.79x	-4.80x
Debt/Equity	4%	22%	1.8%
Unlevered beta	0.49	0.87	0.04
Dividends/REV	0%	1%	0.1%

Other Assumptions

Tobin's Q	80%
Excess cash reinvestment	Cost of capital
Other daims on the firm's assets	$0.00

Capitalization

100% of all rent expenses are capitalized and amortized 'straightline' over 10 years
100% of all R&D expenses are capitalized and amortized 'straightline' over 10 years
E&P expenses are not capitalized
SG&A expenses are not capitalized

Valuation Focus

DCF Valuation	100%
Relative valuation	0%
Distress Valuation	0%

Monte Carlo Simulation Assumptions

Revenue Growth deviation	Normal (0%, 1%)
Operating expense deviation	Normal (0%, 1%)
Continuing Period growth	Triangular (6.79%, 7%, 7.21%)
Country risk premium	Triangular (2.91%, 3%, 3.09%)
Intrinsic value σ(ε)	$0.09
1-year target price σ(ε)	$0.10

Forecast Year / Revenue Growth Forecast / Revenue ($) Forecast

Forecast Year	Revenue Growth Forecast	Revenue ($) Forecast
LTM		$39.38
FY2015	72.5%	$74.30
FY2016	61.7%	$129.37
FY2017	52.3%	$205.41
FY2018	44.9%	$304.76
FY2019	35.9%	$419.88
FY2020	24.2%	$526.21
FY2021	16.9%	$620.21
FY2022	12.7%	$706.61
FY2023	5.9%	$760.19
FY2024	4.8%	$813.90
Continuing Period	3.0%	$862.80

Valuation

Forecast Year	ROIC	WACC	Invested Capital	Implied Enterprise Value	Net Claims on Assets and Dilution Costs	Shares Outstanding	Price per Share
LTM	38.0%	6.0%	$289.11	$1,875.04	-$56.87	35.10	$45.69
FY2015	49.7%	6.4%	$412.47	$1,975.16	-$17.31	35.10	$47.59
FY2016	25.9%	7.0%	$573.42	$2,166.70	$54.49	35.10	$50.16
FY2017	28.2%	7.3%	$775.00	$2,364.46	$137.02	35.10	$52.74
FY2018	29.4%	7.6%	$1,013.87	$2,555.53	$220.15	35.10	$55.23
FY2019	29.3%	7.9%	$1,259.55	$2,707.13	$270.66	35.10	$57.48
FY2020	27.9%	8.3%	$1,446.72	$2,767.21	$279.05	35.10	$59.29
FY2021	27.0%	8.7%	$1,579.99	$2,750.24	$228.17	35.10	$61.44
FY2022	26.4%	9.1%	$1,669.72	$2,672.38	$133.17	35.10	$63.41
FY2023	25.1%	9.5%	$1,663.12	$2,500.06	$0.00	35.10	$65.38
FY2024	25.0%	9.9%	$1,652.94	$2,320.46	-$168.30	35.10	$68.45
Continuing Period	13.3%	10.1%	$1,396.28				

Monte Carlo Simulation Results

The 3σ(ε)-adjusted intrinsic value is $46.03; the 3σ(ε)-adjustec target price is $48.06; and the analysts' median target price is $49.53

Sensitivity Analysis

Revenue growth variations account for 95.9% of total variance
Risk premium's variations account for 2.5% of total variance
Operating expenses' variations account for 1.4% of total variance
Continuing period growth variations account for 0.2% of total varian