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October 4, 2017

# Ligand Pharmaceuticals: LGND

**Hunter Sanna**

**Sector: Health Care**
**Industry: Biotechnology**
**Current Price: $138.63**
**Target Price: $168.00**

**Company Description: Ligand Pharmaceuticals is a biopharmaceutical company focused on developing or acquiring technologies to discover and develop new medicines that help pharmaceutical companies. With a very unique business model, their goal is to provide investors an opportunity to participate in the biotech industry, with diversification across the healthcare sector and a lower-risk business style. Ligand focuses on drug discovery, early-stage drug development, product reformulation, and partnering. Currently, we have partnerships with some of the top pharmaceutical companies, leveraging what they do best, which is late-stage drug development, regulatory management and commercialization.**

## BUY

Current Price:
$138.63

Target Price:
$168.00

Market Cap:
$2.9B

Beta:
1.01

P/E:
367.00

Gross Margin:
95.61%


**Thesis:** Ligand Pharmaceuticals is a differentiator within the healthcare market keeping their costs low and their royalties high. By licensing their technologies and drug development expertise they reap the benefits of their partners while they stick to their specialties. While they recently reported recorded revenue performance for their three staple drugs, they also have had a large number of drugs pass through the FDA process.

**Catalysts:** Forward looking projections that call for positive/negative outlook that will strengthen your thesis. Example:

- Short Term (within the year): Partnership with Melinta Therapeutics just got FDA approval of new drug Baxdela to treat skin infections.
- Mid Term(1-2 years): Currently have 6 drugs pass phase I within the FDA clinical process.
- Long Term (3+): With a large and diverse portfolio Ligand currently has 155 products pumping through the FDA process, as well as international market gains.

## Earnings Performance:

Ligand has been excelling in totaling revenues for the six months ended June 30, 2016 totaling $57.3 million, compared to $49.2 million in the same period for 2016. Royalties, which make up 54.5% of their total revenue, were up 38.4 million compared to $24.1 million in the same period. This increase off 59% was due to higher royalties from their three key products; Promacta, Kyprolis and EVOMELA. Ligand lagged in material sales of $6.7 million, compared to the previous periods with $9.2 million. The main driver for this decrease was a timing issue with their product Captisol. Licensing fees, milestone payments and other revenues were at $12.2 million, which was down $3.6 million from the previous quarter. This decrease was also due to timing of milestones and licensing fees earned. These decreases were mainly because of poor sales within the first quarter, which has a negative correlation to Ligands business structure. Although they offer a low risk alternative to the pharmaceutical industry, they only do as well as their partnering companies. The three top companies for Ligand posted poor results, which lead to a lagged first quarter.

| In Millions of USD except Per Share | FY 2014 | | FY 2015 | | FY 2016 | |
|---|---|---|---|---|---|---|
| 12 Months Ending | 12/31/2014 | | 12/31/2015 | | 12/31/2016 | |
| Revenue | 64.5 | 100.0% | 71.9 | 100.0% | 109.0 | 100.0% |
| Royalty Revenue | 30.0 | 46.5% | 38.2 | 53.1% | 59.4 | 54.5% |
| Collaborative Research and Dev... | 6.1 | 9.4% | 6.1 | 8.4% | 27.0 | 24.8% |
| Material sales | 28.5 | 44.1% | 27.7 | 38.5% | 22.5 | 20.6% |

In the second quarter of 2017, Ligand posted great numbers with total revenues at $28 million, compared to quarter two in 2016 which resulted in $19.5 million. The partnering companies for Ligand made a huge gain in their sales which lead to a royalty income of 14.2 million, up from the same period last year which resulted in 9.8 million. This increase of 46% was due to the total sales of these drugs broke record numbers, and because of the cost structure of these royalties, the more sales the partnered company does the higher royalty Ligand gets paid. Material sales were $5.6 million compared to the same period which was $3.9 million. The main driver for this growth was the timing of Captisol purchases for use in clinical trials and commercial products. Licensing fees, milestones, and other revenues posted $8.2 million, compared to $5.9 million in the same period for 2016.

| In Millions of USD except Per Share | FY 2014 | FY 2015 | FY 2016 | Current/LTM | FY 2017 Est |
|---|---|---|---|---|---|
| 12 Months Ending | 12/31/2014 | 12/31/2015 | 12/31/2016 | 06/30/2017 | 12/31/2017 |
| Revenue | 64.5 | 71.9 | 109.0 | 117.1 | 134.5 |
| Gross Margin | 85.84 | 91.93 | 94.89 | 95.61 | |
| Gross Profit | 55.4 | 66.1 | 103.4 | 111.9 | 128.9 |
| Operating Margin | 30.41 | 38.00 | 40.27 | 41.05 | 50.04 |
| EBITDA | 22.3 | 30.0 | 55.2 | 59.5 | 85.3 |

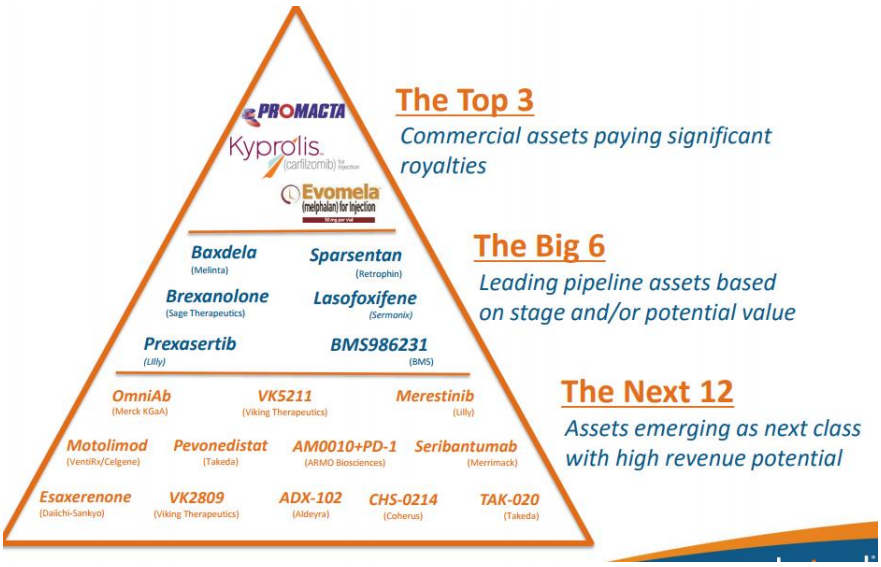
Ligand has been increasing in their growth for the three years shown, with strong projects heading into the next two quarters of 2017. Ligand has done a great job of acquiring companies to add on top of their diverse portfolio of technologies to continue to be innovative and gain more partnerships. If quarter three and four do relatively well for Ligand, they can easily beat their estimates for their fiscal year, but it all depends on the sales of their key products.

## Business Overview:

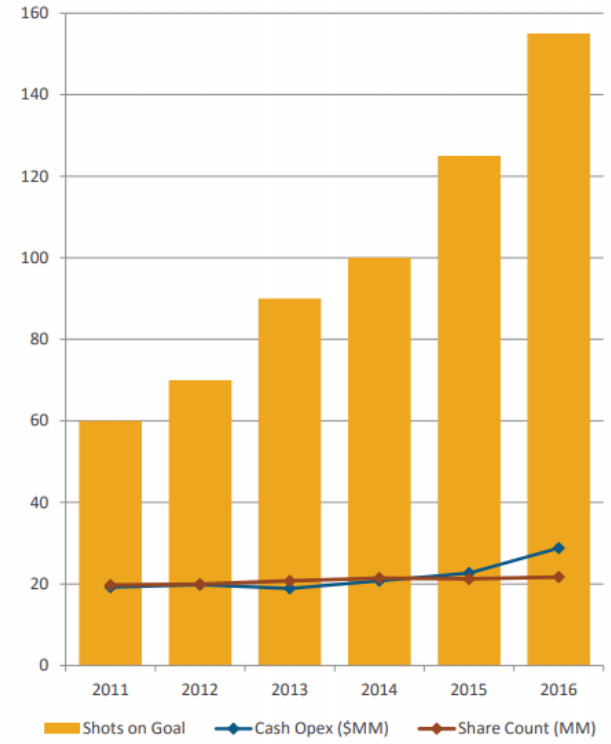
Ligand pharmaceuticals has a very unique structure compared to the rest of the pharmaceutical industry because they focus on what they do best which is drug discovery, early-stage drug development, product reformulation, and partnering. Their main revenue stream comes from partnering with major pharmaceutical company and diversifying their portfolio of partnership across a wide variety within the pharmaceutical industry. Their current portfolio consists of partnerships with big pharma (14), specialty pharma (12), generics (8), and biotech companies (49). Through these partnerships, Ligand licenses their technologies and expertise in drug development to reap the benefits of the sales of the drugs they help develop through royalties. The royalties vary based on drug, and the sales of these drugs, therefore the more drugs the partnering companies sell, the more revenue the company takes in. This provides a distinctive structure to the pharmaceutical industry because they provide low cost substitute to the volatile and high debt industry. Where most big pharma companies spill a ton of costs into research and development of these drugs, Ligand takes a low risk approach by partnering with these companies and reaping the benefits when the partners perform well.

Currently the average royalty Ligand makes on each drug that is marketed is approximately 4.5% when the partners produce the worst sales. The structure to the royalty breakdown is steadily increasing as the sales of these products go up. Along with the licensing fees, Ligand structures these partnerships to have milestone payments that occur when drugs make it through each phase of the FDA trail process. This structure takes out some of the risk associated with drug development, due to the long drawn out process with the FDA and the low rate of success each drug has. So, as each drug passes through the FDA phases Ligand gets paid a milestone payment which in turn makes the upside potential for Ligand to increase their revenue. Within the FDA development process, the overall success rate for a drug to pass all approval processes is 8%, which is an extremely low probability to capitalize on the sales of a product. The final revenue driver for Ligand is the sale of the flagship product Captisol. Captisol is Ligand's patented protected, uniquely modified cyclodextrin, with a chemical structure that was rationally designed to enable creation of new products by significantly improving solubility, stability, bioavailability, and dosing of active pharmaceutical ingredients. This is a highly used product within the develop mentation and the commercialization of different drugs. It currently has a excellent safety recorded and delivery method is extremely efficient relative to not using this chemical structure.

## Company Portfolio:




Ligand currently has 14 commercialized products that generates revenue from. Although they have 14 products, their three high growthest products, which make up a majority of their business are, Promacta, Kyprolis, and EVOMELA. With many drugs being poured through the FDA pipeline Ligand has a strong chance of high growth within the future. Their current business model is stated as a "high shots-on-goal" business model, which has increase from 60 to 155 within the past five years. Their ideology behind this model is that due to the low success rate within the FDA, the more drugs they have, the higher probability that a few of these drugs will pass the screening process. With this business model the company creates strong financial leverage using this model because they only aid the pharmaceutical companies in developing these drugs, so they aren't sinking a large amount of capital in research and development.




Within Ligands current portfolio, they have 155 fully funded drugs that are within the FDA process or in the pre-clinical phase. Besides their 14 commercialized drugs, they have three drugs in the regulatory submission phase, seven drugs within phase three, twenty-one within phase two, twenty-seven in phase one, and forty-nine in the preclinical phase.

## Ownership Summary:

The majority of the holders within Ligand are Investment advisors, more specifically, Blackrock and Vanguard group. Blackrock is a standout owner holding about 12% of the overall shares. Ligand has about 21.1 million shares outstanding and has a very low insider holding at 2.59%. Investment managers have also been adding this company to their portfolios within the month, while hedge funds are selling their positions.

Compare Current Stats Against 09/01/17

| Ownership Type | 08/27/17 | Curr | Change |
|---|---|---|---|
| 11) Investment Advisor | 81.82 | 81.97 | +0.15 |
| 12) Hedge Fund Manager | 9.55 | 9.47 | -0.08 |
| 13) Pension Fund | 2.64 | 2.62 | -0.02 |
| 14) Bank | 2.38 | 2.36 | -0.02 |
| 15) Individual | 2.27 | 2.25 | -0.02 |
| 16) Sovereign Wealth Fund | 0.70 | 0.70 | 0.00 |
| 17) Government | 0.24 | 0.23 | -0.01 |
| 18) Brokerage | 0.13 | 0.13 | 0.00 |
| 19) Insurance Company | 0.06 | 0.07 | +0.01 |
| 20) Venture Capital | 0.06 | 0.06 | 0.00 |
| 21) Unclassified | 0.06 | 0.06 | 0.00 |

## Industry Outlook:

As the baby boomer generation continues to age, more problems will arise within their health. With that being said, when people have health problems doctors tend to prescribe medicine to treat the disease or one can increase their longevity. Currently 90% of those aged 65 and older take at least one drug per week, and within that same age group about 40% takes at least five different drugs per week. As this generation gets older and we have more advancement within the pharmaceutical sector there will be more drugs to prescribe to a more diverse crowd. Currently the baby boomer generation makes up 20% of the American population. Sick people do not care how the economy is doing and millions of drugs are prescribed each day therefore, the pharmaceutical sector offers a potential upside even in downward economies. On average, the biotech industry is expected to grow at an annual rate of about 16%.

Currently there is an active price war with pharmaceuticals in which many companies have given in and reduced their price, while some companies have given a more value based pricing. The big pharma companies who have decreased their price hope to target a larger volume in sales, which would make up for the value based pricing technique that has been used for so many years. Along with these costs the healthcare industry will continue to converge with technology, increasing overall drug development and cheaper options to create these drugs. Another driver for the pharmaceutical industry would be specialized marketing in the most recent year. In 2015, 45 novel drugs were being marketed, but in 2016 it took a large drop and went down to 22 drugs, which means these companies are taking a narrow approach to concentrate these cost and create revenues more efficiently.

## Conclusion:

With solid margins and a very unique business structure, Ligand is a differentiator within the healthcare sector. With leading industry technology and partnering with some of the best big pharma companies, I believe that this company has a very high potential to grow. I currently have faith that Ligand is fairly priced, but with a merger of Crystal Bioscience, their antibody technologies will only get better and more companies are going to be working with them in the future. Their partnering companies have also been performing exceeding well, especially in sales which has a direct correlation with Ligands revenue.

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# CENTER FOR GLOBAL FINANCIAL STUDIES

**Ligand Pharmaceuticals Incorporated (LGND)**

**BULLISH**

**Analyzed by Hunter Sanna**

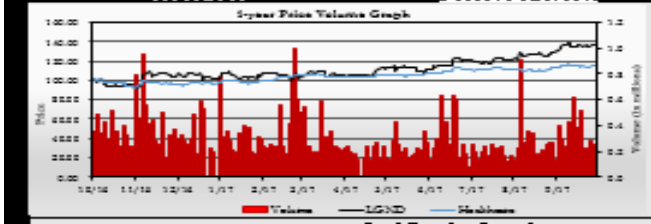
10/6/2017

| | | | |
|---|---|---|---|
| Current Price: | $138.63 | Intrinsic Value: | $151.22 |
| Dividend Yield: | 0.0% | Target Price: | $168.00 |

Target 1 year Return: 21.18%

Probability of Price Increase: 9

5-year Price Volume Graph




**Description**

Ligand Pharmaceuticals Incorporated, a biopharmaceutical company, focuses on developing and acquiring technologies that help pharmaceutical companies in discover and develop medicines worldwide.

**General Information**

| | |
|---|---|
| Sector | Healthcare |
| Industry | Biotechnology |
| Last Guidance | November 9, 2015 |
| Next earnings date | November 9, 2017 |
| Estimated Country Risk Premium | 5.65% |
| Effective Tax rate | 24% |
| Effective Operating Tax rate | 48% |

**Market Data**

| | |
|---|---|
| Market Capitalization | $2,318.65 |
| Daily volume (mil) | 0.14 |
| Shares outstanding (mil) | 21.85 |
| Diluted shares outstanding (mil) | 22.84 |
| % shares held by institutions | 125% |
| % shares held by insiders | 100% |
| % shares held by hedge funds | 19% |
| % shares held by insiders | 2.56% |
| Short interest | 18.78% |
| Days to cover short interest | 16.23 |
| 52 week high | $158.45 |
| 52-week low | $87.58 |
| Volatility | 41.42% |

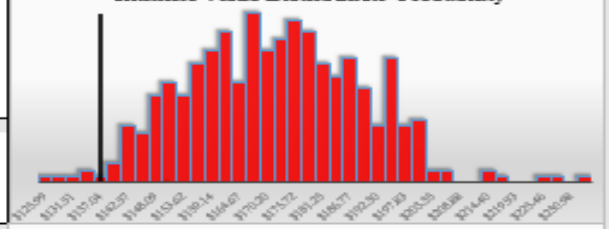
**Past Earning Surprises**

| Quarter ending | Revenue | EBITDA |
|---|---|---|
| 6/30/2016 | 3.84% | -99.54% |
| 9/30/2016 | -12.96% | -96.45% |
| 12/31/2016 | -7.92% | -25.85% |
| 3/31/2017 | -7.55% | -98.85% |
| 6/30/2017 | 11.53% | N/A |
| Mean | -2.65% | -99.26% |
| Standard error | 4.4% | 2.3% |

**Peers**

- Repligen Corporation
- Perkinen Dialysis, Inc.
- Telligent, Inc.
- Lonzell Company, Inc.
- Abbott Laboratories
- Mallinckrodt Public Limited Company
- Pikewell Science, Inc.
- Horizon Pharma Public Limited Company

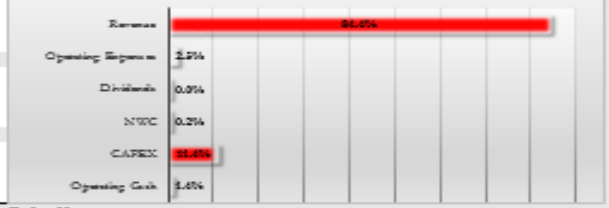
**Intrinsic Value Distribution--Probability**



| Management | Position | Total compensation growth | Total return to shareholders |
|---|---|---|---|
| Higgins, John | Chief Executive Officer and | 26.8% per annum over 5y | 17.73% per annum over 5y |
| Parks, Matthew | President and Chief Operatio | 15.83% per annum over 5y | 17.73% per annum over 5y |
| Kornberg, Matthew | Chief Financial Officer, Pri | -29.7% per annum over 1y | -6.28% per annum over 1y |
| Perkman, Charles | Vice President, General Coun | 22.14% per annum over 5y | 17.73% per annum over 5y |
| Warfield-Graham, Andrea | Vice President of Human Reso | N/M | N/M |
| Marsahke, Keith | Vice President of Biology - | N/M | N/M |

| Profitability | LGND [LTM] | LGND [5 years historical a | Peers' Median [LTM] |
|---|---|---|---|
| Return on Capital [GAAP] | 18.5% | 55.12% | 11.75% |
| Operating Margin | 55% | 27.55% | 11.85% |
| Revenue/Capital [GAAP] | 0.26 | 1.18 | 0.55 |
| ROE [GAAP] | 2.4% | 45.1% | 8.1% |
| Net margin | 7.7% | 25.5% | 18.5% |
| Revenue/Book Value [GAAP] | 0.32 | 1.85 | 0.78 |
| **Invested Funds** | **LGND [LTM]** | **LGND [5 years historical a** | **Peers' Median [LTM]** |
| Cash/Capital | 27.5% | 51.8% | 25.1% |
| NWC/Capital | 2.8% | -5.5% | 8.8% |
| Operating Assets/Capital | 58.5% | 55.5% | 46.5% |
| Goodwill/Capital | 11.5% | 15.5% | 15.8% |
| **Capital Structure** | **LGND [LTM]** | **LGND [5 years historical a** | **Peers' Median [LTM]** |
| Total Debt/Market Capitalization | 8.35 | 8.47 | 8.54 |
| Cost of Existing Debt | 5.5% | 5.5% | 8.8% |
| CGFS Rating [1-year, 2-year, and default Probabili | PPP | PPP | P |
| WACC | 6.1% | 11.8% | 11.4% |

**Sensitivity Attribution Analysis**




**Porter's 5 Forces [scores are out of 100]**


**Valuation**

| Period | Revenue Growth Forecast | NOPAT Margin Forecast | Revenue to Capital Forecast |
|---|---|---|---|
| Base Year | 55% | 34.5% | 0.21 |
| 6/30/2018 | 28% | 75.5% | 0.22 |
| 6/30/2019 | 19% | 76.4% | 0.24 |
| 6/30/2020 | 17% | 77.5% | 0.24 |
| 6/30/2021 | 16% | 76.8% | 0.24 |
| 6/30/2022 | 14% | 76.2% | 0.28 |
| 6/30/2023 | 12% | 75.8% | 0.19 |
| 6/30/2024 | 11% | 75.4% | 0.18 |
| 6/30/2025 | 9% | 74.5% | 0.17 |
| 6/30/2026 | 7% | 74.5% | 0.16 |
| 6/30/2027 | 5% | 73.5% | 0.15 |
| Continuing Period | 4% | 73.4% | 0.14 |

| Period | Return on Capital Forecast | WACC Forecast | Price per share Forecast |
|---|---|---|---|
| Base Year | 7.1% | 6.1% | $143.42 |
| 6/30/2018 | 17.5% | 5.4% | $155.38 |
| 6/30/2019 | 16.7% | 5.7% | $183.37 |
| 6/30/2020 | 16.4% | 6.0% | $208.88 |
| 6/30/2021 | 15.5% | 6.7% | $219.81 |
| 6/30/2022 | 15.5% | 6.5% | $237.54 |
| 6/30/2023 | 14.5% | 7.0% | $256.16 |
| 6/30/2024 | 13.0% | 7.5% | $282.18 |
| 6/30/2025 | 13.0% | 7.5% | $302.52 |
| 6/30/2026 | 12.4% | 8.1% | $324.36 |
| 6/30/2027 | 11.2% | 8.5% | $347.36 |
| Continuing Period | 10.4% | 8.5% | |