

July 14, 2011

**Key Metrics**

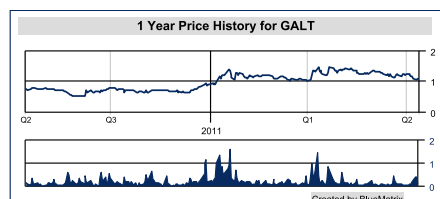
GALT - OTC BB	\$1.08
Pricing Date	Jul 13 2011
Price Target	\$6.00
52-Week Range	\$1.57 - \$0.48
Shares Outstanding (mm)	69.6
Market Capitalization (\$mm)	\$75.2
3-Mo Average Daily Volume	155,435
Book Value/Share	\$0.12
Price/Book	9.0x

**EPS(\$)** FY: December

	2010	Prior 2011	Curr. 2011	Prior 2012	Curr. 2012
1Q-Mar	--	--	(0.04)A	--	--
2Q-Jun	--	--	(0.03)E	--	--
3Q-Sep	--	--	(0.04)E	--	--
4Q-Dec	--	--	(0.05)E	--	--
FY	(0.15)	--	(0.17)E	--	(0.21)E
P/E					

**Revenue(\$mm)**

	2010	Prior 2011	Curr. 2011	Prior 2012	Curr. 2012
1Q-Mar	--	--	0.0A	--	--
2Q-Jun	--	--	0.0E	--	--
3Q-Sep	--	--	0.0E	--	--
4Q-Dec	--	--	0.0E	--	--
FY	0.0	--	0.0E	--	0.0E



**Company Description:**

*Galectin Therapeutics Inc., a small biopharmaceutical company based in Newton, Massachusetts, is a leader of galectin science, applying its expertise to drug development for fibrotic disease and oncology.*

# **Galectin Therapeutics Inc.**

## **Rating: Buy**

### **Leader in Galectin-Targeting Therapeutics; Initiating Coverage with Buy Rating**

**Investment Highlights:**

- **We Are Launching Coverage of Galectin Therapeutics With a Buy Rating and \$6 Price Target Based on Our Sum-of-Parts Valuation.**
- **Galectin Science.** Many scientists have been working to improve their understanding and application of galectin science because of the vast nature of its application in oncology and immunology. In our opinion, Galectin Therapeutics is far ahead of the competition with respect to developing drugs that can target galectin proteins. Because the backbone of this technology is carbohydrate-based, the company's drugs have the advantages of antibody technology (i.e., a long half-life and targeting) and are very safe because of simple breakdown molecules.
- **Turnaround Story.** Over the past few years, Galectin Therapeutics' research team has substantially developed galectin-targeting drugs despite tough macroeconomic conditions and inadequate strategies set forth by previous top management. Galectin's recently named CEO, Dr. Peter Traber, formerly the CMO of GlaxoSmithKline, has a very strong background in research, medicine, and business. In our opinion, Dr. Traber has been able to quickly reevaluate the company's business, redirecting its focus to areas of strategic interest that, in our opinion, could yield significant share price appreciation from current levels.
- **Strong Data from Lead Drug.** From Phase I and II studies with lead drug candidate GM-CT-01, there is solid proof of safety and encouraging signs of efficacy in colorectal cancer. In addition, Dr. Traber has begun to focus the company on developing a drug for the treatment of liver fibrosis. Because of the high unmet need in liver fibrosis, we believe peak sales for a drug that can reverse fibrosis could be \$3.6 billion in 2018. In our opinion, there is very strong preclinical proof that the company's drugs can reverse liver fibrosis. Management expects to initiate Phase I/II trials in 1H12, with possible proof of concept results by 1H13.
- **Catalysts With Near-Term Upside.** We believe GALT has upside potential from additional pipeline projects. The company expects INVIMA, the Colombian regulatory agency, to make a decision on marketing approval in colorectal cancer possibly by 1Q12. If approved, we believe the drug could eventually generate \$7mm-\$10mm of profit, which would help GALT finance development of its pipeline. In September, the Ludwig Institute for Cancer Research (Belgium) is expected to initiate a Phase I/II study to investigate the immunological mechanism of GM-CT-01 in advanced metastatic melanoma patients, with results possible by mid-2012. Positive results could significantly expand the combination potential of GM-CT-01 with cancer vaccines and chemotherapeutics.

## Investment Thesis

Galectin Therapeutics is developing a potentially blockbuster therapy for liver fibrosis, an area of high unmet need. The company is pioneering a new technology based on galectin science, a unique area of confluence between carbohydrate and protein chemistry. The company's significant near-term catalysts include potential approval of a colorectal cancer therapeutic in Colombia by 1Q12, potential proof of concept as an additive to chemotherapeutics and cancer vaccines for enhancing immunology by mid-2012, and potential human proof of concept of reversal in liver fibrosis starting in 1H13.

## Investment Positives

1. **Galectin Technology.** Galectin Therapeutics, as the name suggests, is the leader in research and development in the area of galectin science. Galectin science relates to targeting galectin proteins, a group of about 15 proteins that are secreted from several different tissues in the body and normally act as key mediators of disparate biologic and pathologic functions. The company's initial data have shown galectin's potential role in several oncology and immunology-related disease areas. As a result, we believe galectin targeting has the ability to progress development of several therapeutics with blockbuster potential. In our opinion, Galectin Therapeutics stands out among its peers based on the company's expertise in galectin technology.
2. **Liver Fibrosis.** Specifically, we are very excited that the company's technology could yield blockbuster treatment of liver fibrosis, in light of the following:
  1. There is compelling evidence from preclinical data that this technology can potentially reverse liver fibrosis.
  2. The safety profile of the company's technology was established in prior Phase I and Phase II cancer trials, which lowers clinical risk and could shorten the time needed for clinical development.
  3. There is a high unmet need for patients with liver fibrosis; the disease results in a high rate of morbidity and there are no approved drugs or investigational drugs that have shown reversal of the disease.
3. **Colorectal Cancer.** The company's Phase I and II studies with lead drug candidate GM-CT-01 established solid proof of safety and encouraging signs of efficacy in colorectal cancer. The company has chosen to decelerate the development in colorectal cancer due to shifting focus to immunology and also due to limited financial resources. We believe management will eventually be successful at finding a partner with which to fully develop GM-CT-01 in colorectal cancer.
4. **Inexpensive Valuation.** We calculate an intrinsic value of approximately \$6 per share for Galectin Therapeutics through our sum-of-parts methodology, in which we assign a per-share value to the company's liver fibrosis pipeline, oncology pipeline, and technology. Based on our valuation, there is 5.5x upside to the stock price based on yesterday's closing price.
5. **Significant Upside From Pipeline.** Our model assumes probability-adjusted contributions from liver fibrosis and colorectal cancer; however, we believe realization of the following scenarios could provide upside to our estimates:
  1. GM-CT-01 could win approval for colorectal cancer in Colombia and other Latin American countries based on current data; we expect a final decision from INVIMA, the Colombian regulatory agency, by 1Q12.

2. The company's drug candidate could enhance actions of immunological therapy of metastatic melanoma; we expect to start seeing results from a metastatic melanoma trial run by the Ludwig Institute for Cancer (Brussels) by mid-2012.
  3. There is early evidence that the company's technology could potentially be active in several solid tumors; we currently do not assume any contribution from this in our projections.
6. **Catalysts.** In our opinion, there are several catalysts over the next 6 to 18 months that could trigger meaningful upside to Galectin's stock price:
1. The Ludwig institute for Cancer Research in Brussels expects to initiate a Phase I/Phase II study to evaluate GM-CT-01 in advanced metastatic melanoma by September, with results possibly starting in mid-2012.
  2. The company expects approval of GM-CT-01 in Colombia during 1Q12, with other Latin American countries starting thereafter.
  3. In mid-2012 we expect the company to initiate a Phase I/II trial to evaluate GM-CT-01 or GR-MD-02 in liver fibrosis patients. We could see results from that trial during 1H13.
  4. Next year, we expect the company to focus on a partnership enabling Phase III testing of GM-CT-01 trials in colorectal cancer.
7. **Strong Management.** The depth of Galectin Therapeutics' management team is impressive, in our view. Management has extensive experience in both the healthcare and business fields. Dr. Peter Traber, who was named CEO of Galectin in March 2011, has extensive experience in clinical development, medical affairs, research and business; he was previously the CEO of University of Pennsylvania Health System and CMO of GlaxoSmithKline plc. Anatole Klyosov, Ph.D., D.Sc., one of the company's founders, remains its CSO; Dr. Klyosov is widely published and considered an expert in galectin science. Dr. Traber is also supported by Eliezer Zomer, Ph.D., VP of Manufacturing and Product Development since 2003; Anthony Squeglia, CFO, since October 2007; and Maureen E. Foley, COO, since 2001. Dr. Scott Friedman, a pioneer in the field of liver fibrosis and currently the Chief of Liver Diseases at Mount Sinai School of Medicine, is one of Galectin Therapeutics' advisors.

## Investment Risks

- **Financial Risks.** The company may need financing to sustain and grow its pipeline, which could be dilutive to current shareholders.
- **Clinical Risks.** Drugs in pre-clinical and clinical trials may not advance because of inadequate safety and/or efficacy, or because a determination of efficacy or safety cannot be made. Specifically, the company's drugs could fail to show efficacy in liver fibrosis and colorectal cancer in human trials.
- **Regulatory Risks.** Drugs may not gain approval from regulatory agencies such as the FDA, EMEA, or INVIMA.
- **Competition.** Although competition in galectin technologies, and, hence, Galectin Therapeutics' drugs, is limited, it will likely increase from the many public and private companies developing pharmaceuticals using disparate technologies.
- **Reimbursement Risk.** Sales of Galectin Therapeutics' drugs will probably be highly dependent on reimbursement from private insurers, as well as government agencies. Success of an approved drug will depend on reimbursement, which can depend on the strength of clinical data.
- **Collaborative Risk.** Galectin Therapeutics may have little or no control over partnered programs, and, as such, the interests of collaborative partners may not be aligned with those of the company's shareholders.

## Valuation

We calculate an intrinsic value of approximately \$6 per share for Galectin Therapeutics through our sum-of-parts methodology, in which we assign a per-share value to the company's liver fibrosis pipeline, oncology pipeline, and technology using an 89.5 million share count (in 2013), assuming meaningful dilution from current levels. We derive our price target of \$6 by rounding off our calculated intrinsic per-share values, as detailed in Figure 1, below:

**Figure 1: Sum-of-Parts Valuation (in \$ millions and \$/share)**

Component	Value
Severe Liver Fibrosis	342
Oncology	58
Technology value	100
<b>Total</b>	<b>501</b>
*Cash beyond 1 year	

Source: Morgan Joseph TriArtisan LLC estimates

In building our model for a potential treatment for liver fibrosis, we considered the sickest patients and assumed pricing of the drug at the lower end of similarly beneficial orphan disease drugs. Because the drug candidate is in the early stages of development, we ascribed the probability of approval at around 25%. We also assume that the drug will be partnered and that Galectin Therapeutics will retain a 30% share of profits of this program.

**Figure 2: Estimated Acute Liver Fibrosis Market in the U.S.**

Severe Liver Market	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patient Market	61,000	64,050	67,253	70,615	74,146	77,853	81,746	85,833	90,125	94,631	99,363
Drug cost (\$/year)	98,012	101,932	106,010	110,250	114,660	119,247	124,016	128,977	134,136	139,502	145,082
Annual \$ market (\$ million)	5,979	6,529	7,129	7,785	8,502	9,284	10,138	11,071	12,089	13,201	14,416
Peak Penetration	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Peak Sales (\$ million)	1,793.6	1,958.6	2,138.8	2,335.6	2,550.5	2,785.1	3,041.3	3,321.2	3,626.7	3,960.4	4,324.7
Drug Inflation	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patient market growth	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Value (\$ million)									21,760	23,762	25,948
Present Value (\$million)	3,651	4,563	5,704	7,130	8,913	11,141	13,927	17,408			
Years to approval	5										
Years to peak from approval	3										
Total years to peak	8										
Peak Year	2018										
Sales Multiple	6										
Discount Rate	25%										
Probability of approval	25%										
Profitability to company	30%										
Prob. Adj. value (\$ million)	342										

Source: Morgan Joseph TriArtisan LLC estimates

The pricing of the drug is within the range of highly priced cancer and orphan disease drugs, as shown below:

**Figure 3: Annual Pricing for Select Cancer and Orphan Disease Drugs**

Drug	Disease	US prevalence	Delivery	Pricing (\$/year)
Sutent	Renal Cancer	90,000	Oral	48,000
Tarceva	Lung Cancer	148,800	Oral	70,000
Provenge	Prostate Cancer	2,276,000	Infusion	92,000
GM-CT-01*	Severe Liver Disease	60,000	Infusion	98,000
Zavesca	Gaucher's disease	5,000	Oral	128,000
Fabrazyme	Fabry's disease	2,500	Infusion	239,000
Elaprase	Hunter syndrome	1,500	Infusion	400,000
Naglazyme	MPS VI	1,200	Infusion	441,000
Cerezyme	Gaucher's disease	5,000	Infusion	521,000
Soliris	PNH	1,050	Infusion	497,000

Source: Morgan Joseph TriArtisan LLC estimates

In building our model for a potential treatment for oncology, we considered the metastatic colorectal cancer market, which is large and rife with competition. We assumed peak penetration of only 10%, as we have not yet seen data on this drug candidate from a randomized trial. We assigned a 35% probability of approval for this indication and 15% profitability to the company following a partnership.

**Figure 4: Estimated Colorectal Cancer Market**

Colorectal Cancer	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patient Market	106,100	111,405	116,975	122,824	128,965	135,413	142,184	149,293	156,758	164,596	172,826
Drug cost (\$/year)	24,000	24,960	25,958	26,997	28,077	29,200	30,368	31,582	32,846	34,159	35,526
Annual \$ market (\$ million)	2,546	2,781	3,036	3,316	3,621	3,954	4,318	4,715	5,149	5,623	6,140
Peak Penetration	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Peak Sales (\$ million)	254.6	278.1	303.6	331.6	362.1	395.4	431.8	471.5	514.9	562.3	614.0
Drug Inflation	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patient market growth	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Value (\$ million)									3,089	3,374	3,684
Present Value (\$million)	995	1,114	1,248	1,397	1,565	1,753	1,963	2,199			
Years to approval	6										
Years to peak from approval	4										
Total years to peak	10										
Peak Year	2020										
Sales Multiple	6										
Discount Rate	12%										
Probability of approval	35%										
Profitability to company	15%										
Prob. Adj. value (\$ million)	58										

Source: Morgan Joseph TriArtisan LLC estimates

Our valuation of the company's technology component ascribes 25% of the total value of the pipeline to the company's galectin-based technology assets. As it relates to Galectin Therapeutics, our methodology is similar or more conservative than the values we assign to companies with technology platforms such as ImmunoGen and Nektar Therapeutics.

## Comparables

Once Galectin Therapeutics has human proof of concept in liver fibrosis, we believe the stock's valuation will rise to levels consistent with companies that already possess a proven technology platform and a late-stage drug in the pipeline, and/or possibly a partnership. Therefore, we believe it is reasonable to compare Galectin to biotechnology companies which have had superior mid-stage trials, are currently in late-stage trials in blockbuster indications, have partners for their late-stage drugs, and have technology-based pipelines. We believe Galectin Therapeutics is well-positioned to attain similar characteristics within the next two years; for example,

- ImmunoGen, which is the leader of antibody conjugate technologies, is developing T-DM1 in partnership with Roche/Genentech.
- Isis Pharmaceuticals, the leader of antisense technology, is developing Mipomersin for hypercholesterolemia in partnership with Genzyme/Sanofi Aventis.
- Nektar Therapeutics, the leader of pegylation technology, is developing an opioid-induced constipation drug in collaboration with AstraZeneca.
- BioMarin Therapeutics, the leader in orphan diseases, is also a leader in enzyme-based therapeutics.

At this juncture, peer companies are trading at enterprise values significantly above Galectin Therapeutics', as demonstrated below:

**Figure 5: Peer Companies vs. GALT (\$ in millions)**

	Market Cap 6/29/2011	EV 6/29/2011
IMGN	821	719
BMRN	2,970	3,040
ISIS	915	638
NKTR	823	930
GALT	85	79

*Source: Yahoo Financials, Morgan Joseph TriArtisan LLC estimates*



## Company Background

Galectin Therapeutics, a small biopharmaceutical company based in Newton, Massachusetts, is a leader of galectin science, applying its expertise to drug development for fibrotic disease and oncology. The company recently changed its name from Pro Pharmaceuticals to Galectin Therapeutics, which we believe more accurately reflects its core expertise in galectin science.

Although Galectin Therapeutics could pursue a broad range of diseases, management has instead chosen to concentrate on diseases with serious, life-threatening consequences, especially those where current treatment options are limited or non-existent. The company is currently focused on oncology and liver fibrosis because these are life-threatening diseases for which Galectin Therapeutics has strong proof of concept. In the future, the company's technology could potentially be applicable to dermatology and neurology (stroke).

Even though the company is small, it developed an international regulatory and marketing scope very early on. Galectin is currently developing the liver fibrosis program on its own. In the future, we expect Galectin to sign a partnership to develop its colorectal cancer program worldwide. Management is working with a Colombian pharmaceutical company to get a colorectal cancer program approved.

### Galectin Technology: Overview

#### *Unique Carbohydrate Expertise*

We believe Galectin Therapeutics is one of the few companies in the biotechnology sector with expertise in carbohydrate technologies. The company is developing drugs that are based on a carbohydrate backbone. Carbohydrate chemistry is extremely complicated, and there are a dearth of carbohydrate-based drugs in the world. Very few chemists possess a commanding knowledge of carbohydrates, even within the large pharmaceutical companies. While there are natural drugs with carbohydrates linked to them, and some antibiotics, there are very few synthetic carbohydrate based drugs. As a result, there are very few companies in this sector that focus on carbohydrate technologies.

#### *Structure of Galectin Proteins*

The company has developed a technology to research and develop unique carbohydrate-based molecules that target several galectin proteins collectively. There are around 15 different galectin proteins, all of which have a common structure and some variable element. The common structure in every galectin contains a carbohydrate recognition domain that binds to  $\beta$ -galactose-containing carbohydrates and glycoproteins. The variable element in galectins is an oligomerization domain that enables binding of one protein to another. Each unit of drug can target several galectin proteins. Collective targeting is important in this case because of the synchronous action of several galectins. Therefore, we believe the company's technology has a competitive edge over single galectin-targeting small molecules, RNA-based drugs, and antibodies.

### **Role of Galectin Proteins**

Galectin proteins, which are secreted from several cells in different tissues in the body, are a series of proteins that normally act as key mediators of disparate biologic and pathologic functions. Galectins can bind with very high affinity to galactose-containing glycoproteins on the surface of cells and in the extracellular matrix. In addition, their affinity for other galectins of similar type enables them to form lattice structures on cell surfaces, which can promote cell-to-cell and/or cell-to-matrix interactions. Galectins help the binding between cells, promote modulate cell signaling, and mediate cell-to-cell interactions. The presence of galectins is markedly increased in pathological reactions like fibrosis, cancer, and inflammation, and further promotes pathology.

Under normal conditions, there are small amounts of galectins present in different cell tissues; however, in conditions involving immune regulation, inflammation, fibrogenesis, and tumor cell biology, a marked increase in secreted galectins is evident. Increased secretion could be a cause for promotion or potentiation of pathological conditions like fibrosis.

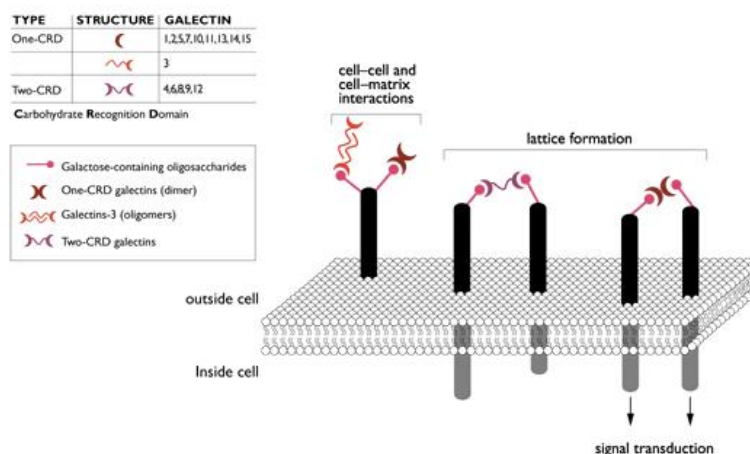
### **Strong Molecular Pre-Clinical Proof**

Galectin-3, a beta-galactoside-binding animal lectin of 30 kDa, is one of the key galectin proteins. It comprises two domains: a carboxylterminal domain that contains the carbohydrate-binding region, and an amino-terminal domain consisting primarily of tandem repeats of nine amino acids to cross-link carbohydrate and noncarbohydrate ligands. Galectin-3 has been shown to have a role in several biological processes, including cell proliferation, adhesion, and survival. Research has shown that disruption of the Galectin-3 gene blocks myofibroblast activation and procollagen (I) expression in vitro and in vivo, followed by attenuation of liver fibrosis. Pre-clinical data also strongly suggest that Galectin-3 is required for myofibroblast activation and matrix production, which eventually lead to liver fibrosis. In our opinion, there is strong evidence that Galectin-3 has a direct causal relationship with liver fibrosis. (*Henderson et al. PNAS March 28, 2006*)

### **Galectin Inhibitors**

The company develops galectin inhibitors, which are carbohydrates with galactose residues that bind galectins. The backbone of galectin-targeting drugs are naturally-occurring carbohydrate polymers of varying molecular weights. Making modifications to galactose residues on these polymers helps create compounds that bind to specific galectin proteins, which can then be used for the treatment of a particular disease. Multiple galectin proteins are bound by a single drug molecule. The company's drugs generally have a high molecular weight and, consequently, a long half-life and low toxicity (metabolize to CO<sub>2</sub> and H<sub>2</sub>O), and are inexpensive to manufacture. Galectin Therapeutics designs drug candidates that can bind and inhibit the functioning of secreted galectins. Scientists specializing in galectin science have hypothesized that the inhibition of such activities can alleviate and reverse the pathological conditions created in the presence of galectins.



**Figure 6: Galectin Structure and Function**

Source: Company reports

### **GM and GR Series**

The company is presently developing two series of galectin compounds: the GM series and the GR series. GALT has done extensive testing of one of the compounds from the GM series, and therefore ample safety and efficacy information about that series of drugs exists. While there is limited clinical information on the GR series, we believe there is a high likelihood of reasonable safety for this series of compounds as well, based on the commonality of structure.

## **Pipeline**

Galectin Therapeutics is focusing on developing its galectin inhibitors in two key disease areas, liver fibrosis and cancer.

We believe Galectin will likely develop a drug to treat liver fibrosis, which is caused by a variety of serious conditions. Currently, there are no treatments for liver fibrosis apart from a liver transplant, which can be costly and risky. In our opinion, and based on current pre-clinical data, Galectin Therapeutics' compound series has the ability to reverse liver fibrosis.

In cancer treatment, the company has programs testing GM-CT-01 in combination with 5-FU for the treatment of metastatic colorectal cancer as a cancer chemotherapeutic approach and as a treatment for advanced metastatic melanoma as an immunotherapy approach.

**Figure 7: Galectin Therapeutics Pipeline**

	Pre-Clinical	Phase 1	Phase 2	Phase 3	Registration Submitted
<b>Colorectal Cancer</b>					
GM-CT-01					
• International (Colombia)					
• United States					
<b>Tumor Vaccine</b>					
GM-CT-01					
<b>Liver Fibrosis</b>					
GM-CT-01					
GM-CT-02					
GR-MD-01					
GR-MD-02					

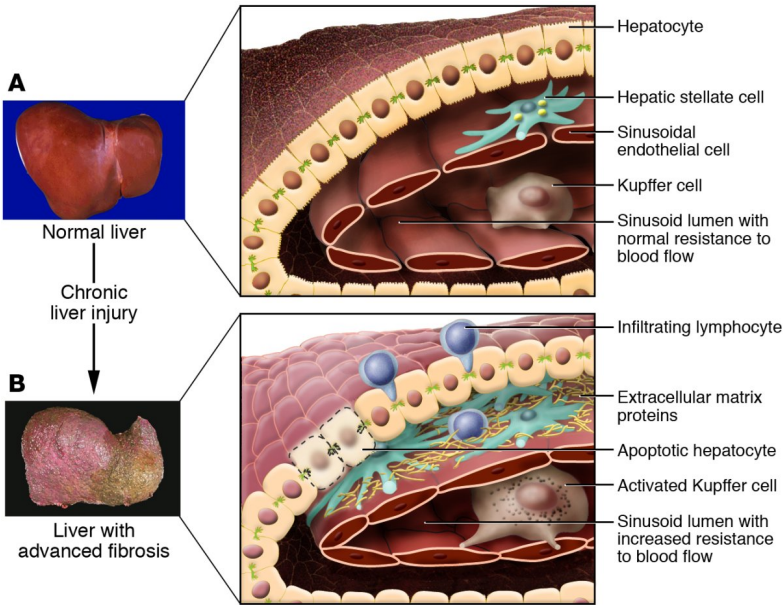
Source: Company reports

## Applications in Liver Fibrosis

Damage, inflammation, or repair of normal tissue can lead to fibrosis, which is the formation of extensive connective tissue in the form of collagen and other such proteins and cellular elements such as myofibroblasts. Fibrosis is apparent in tissues where scarring is present and can lead to eventual dysfunction when excess connective tissue disrupts the normal functioning of the affected organ.

Several organs can be impacted by fibrosis. Liver fibrosis is the scarring process generally caused by the response to an injury. The liver typically responds to injuries, just as do other organs like skin, by the deposition of new collagen. Over time, this process can lead to cirrhosis of the liver, a process in which scarring becomes so bad that the blood flow through the liver is disrupted.

Figure 8: Liver Fibrosis



Source: *J Clin Invest.* 2005;115(2):209–218 doi:10.1172/JCI24282

The only existing treatment for liver cirrhosis is organ transplantation, which is very costly and generally has poor outcomes (repeated liver failure). In certain countries, there is a higher incidence of liver transplant than others. The following table illustrates the top 10 countries in the world ranked by incidence per capita (transplants per million):

Figure 9: Per Capita Incidence of Liver Transplantation in Top Countries

# 1	<a href="#">Belgium:</a>	21.0343 liver transplants per 1	
# 2	<a href="#">Austria:</a>	18.0819 liver transplants per 1	
# 3	<a href="#">Spain:</a>	17.2033 liver transplants per 1	
# 4	<a href="#">Portugal:</a>	17.0358 liver transplants per 1	
# 5	<a href="#">Sweden:</a>	15.8854 liver transplants per 1	
# 6	<a href="#">Oman:</a>	14.6569 liver transplants per 1	
# 7	<a href="#">Switzerland:</a>	11.2165 liver transplants per 1	
# 8	<a href="#">Canada:</a>	10.029 liver transplants per 1	
# 9	<a href="#">New Zealand:</a>	9.4176 liver transplants per 1	
# 10	<a href="#">Finland:</a>	9.38158 liver transplants per 1	

Source: *Morgan Joseph TriArtisan LLC estimates*

There is a significant need for a treatment for liver failure in the U.S., as well. While the number of liver transplants performed in the U.S. reached approximately 6,000 per year in 2010 (up around 50% from approximately 4,000 a decade earlier), the demand for donor organs far exceeds the supply. It is estimated that around 17,000 patients in the U.S. are currently waiting for a liver transplant. According to the American Liver Foundation, in 2005, 1,848 patients died waiting for a donated liver to become available.

**Figure 10: Size of the U.S. Fibrosis Market**

Transplants	8,000	per year
Wait List	17,000	Prevalence
Cirrhosis Deaths	60,000	per year
Cirrhosis	450,000	Prevalence
Liver Disease	25,000,000	Prevalence

*Source: Company Reports, Morgan Joseph TriArtisan LLC estimates*

While 17,000 patients are on the wait-list at any given time in the U.S., around 8,000 patients undergo transplants. A significant proportion of patients do not undergo transplants for various reasons, including relative health levels and a patient's inability to cease alcohol consumption. Physicians generally look for the following indications when selecting patients for liver transplants:

- Irreversible cirrhosis with at least two signs of liver insufficiency
- Fulminant hepatic failure: coma Grade 2
- Unresectable hepatic malignancy confined to the liver that is less than 5 cm. in diameter
- Metabolic liver disease that would benefit from liver replacement
- MELD score of 15 or higher

Cirrhosis is the twelfth leading cause of death by disease, accounting for around 60,000 deaths each year. Liver disease can be caused by viral diseases (Hepatitis B and C), metabolic diseases (diabetes and obesity), alcoholism, and drug toxicity. We estimate that, over all in the U.S., there are around 25 million people affected by liver disease. It is estimated that over 4 million Americans have been infected with hepatitis C, while 1.4 million have been infected with hepatitis B. It is also estimated that as many as 20 percent of Americans have fatty liver disease, a side-effect of diabetes and obesity. In our view, a possible safe treatment for liver fibrosis, if deemed preventative medicine, would address a very large market in the States.

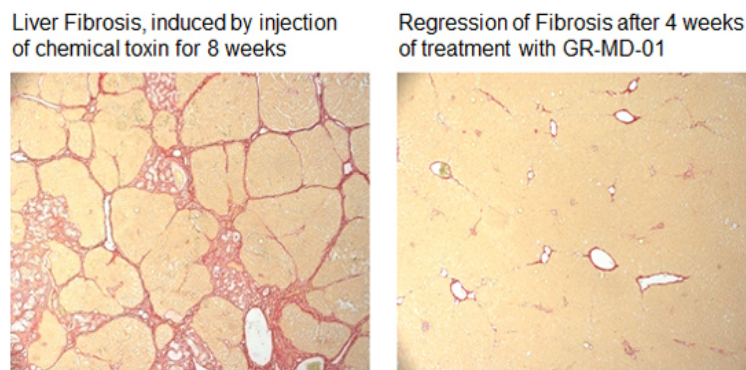
Additionally, a considerable segment of the global population is affected by hepatitis, and therefore the market of a safe and effective therapy could be very meaningful. An estimated 350 million people worldwide are infected with HBV, and 270 million - 300 million people are infected with HCV. According to the World Health Organization, the risk of progression to cirrhosis from chronic infection with HBV and HCV is around 25% and 20%, respectively, which means that about 87.5 million people with chronic HBV infection and up to 60 million people with chronic HCV infection are at risk of developing cirrhosis.

### ***Strong Evidence In Liver Fibrosis***

There is increasing scientific evidence that fibrosis is dynamic and amenable to reversal. Galectin-3 is hypothesized to be key in the pathogenesis of liver fibrosis. It is believed that the presence of Galectin-3 protein activates stellate cells in the liver, which then initiate a pathway to fibrosis. The company has conducted experiments with its galectin inhibitors in collaboration with Dr. Scott Friedman, the Director of Liver Diseases at Mount Sinai School of Medicine, and a worldwide expert in the field of liver fibrosis. In these experiments, three galectin-inhibiting drug candidates were shown to reduce inflammatory and fibrogenic gene expression in hepatic stellate cell cultures, the primary fibrogenic cell in the liver.

Additionally, in-vivo preclinical experiments have shown that extensive liver fibrosis induced in rats by toxin administration can be significantly resolved after a four-week treatment with GR-MD-01. These data suggest that treatment with galectin-inhibiting drugs may dramatically reduce previously established liver fibrosis. In our opinion, these data show, spectacularly, that fibrosis can be reversed.

**Figure 11: Regression of Liver Fibrosis with GR-MD-01**



*Source: Company reports*

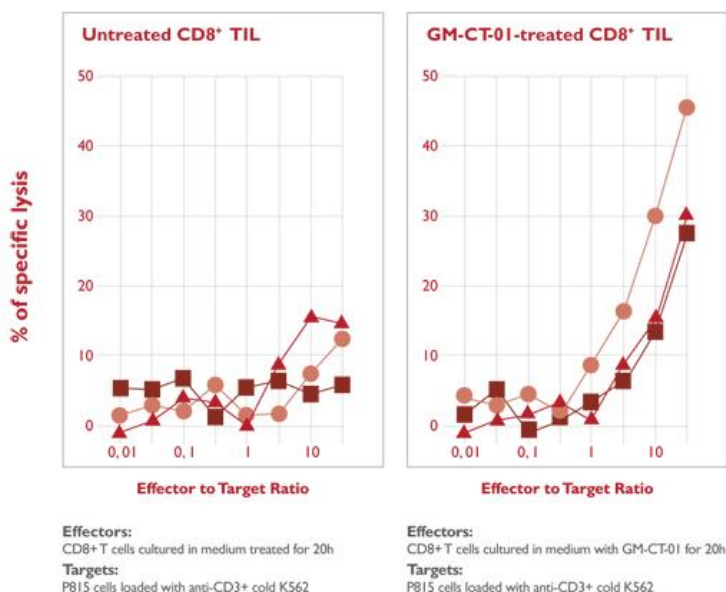
## Application in Oncology

Galectin's compounds counteract cancer through both immunological and pathological pathways.

The normal function of the human immune system is to respond to and attack foreign bodies that could potentially be harmful. A complex set of cells and mechanisms are involved in such a response and attack system. Galectins are known to be involved in the modulation of multiple immune cells such as macrophages and lymphocytes. The company is focused on targeting galectin modulation of the immune system in response to cancerous cells.

Cancer cells generally express antigens that can be recognized by cells in the immune system called tumor-infiltrating lymphocytes (TILs). These are cytotoxic T-cells that not only recognize cancerous cells, but also kill them. In a growing cancer, there is generally a fight between TILs trying to eliminate cancer cells and the cancer cells' inherent ability to grow via rapid cell division. Immunological cancer therapies, such as Dendreon Corp.'s recently approved Provenge, are intended to boost TILs natural immune response.

Generally, galectin-3 has a protective role that is thought to inhibit the ability of TILs to kill tumor cells. Dr. Pierre van der Bruggen's research team at the Ludwig Institute in Brussels, Belgium, has shown that inhibiting galectin-3 can improve the efficacy of T lymphocytes in killing tumor cells (source: *Immunity*; volume 28; pages 414-424, 2008; *Cancer Research*; volume 70; pages 7476-7488, 2010.). Galectin Therapeutics has found that in cultured cells GM-CT-01 increases the secretion of cytokines and greatly enhances the ability of TILs to kill tumor cells, as shown in the figure below (source: *Immunity*; volume 28; pages 414-424, 2008; *Cancer Research*; volume 70; pages 7476-7488, 2010)

**Figure 12: Immunologic Affect of GM-CT-01**

Source: Company reports

To expand the understanding of this phenomenon in humans, the Ludwig Institute for Cancer Research in Belgium is expected to start a Phase I/II study in September in advanced metastatic melanoma patients. We expect the trial to begin in September 2011 and to start yielding results in mid-2012. Results from this trial could significantly increase the potential for this drug candidate as an additive treatment with chemotherapy and cancer vaccines.

### Application in Colorectal Cancer

The company has evaluated GM-CT-01 in combination with chemotherapy in one Phase I and two Phase II studies. In our opinion, the data from these trials have been very encouraging. If the resources available to develop these drug candidates are sufficient, we believe there is a good probability of proving efficacy, obtaining approval, and successfully marketing the drug candidate.

### Strong Safety Data

GM-CT-01 has been found to enhance the activity of 5-FU, which continues to form the backbone of colorectal cancer therapy in the U.S. and elsewhere in the world. Additionally, a decrease in some 5-FU associated side effects has been observed in trials. The company has conducted three trials with GM-CT-01. Combined data from 57 patients who enrolled in these clinical trials showed that there was a lower incidence of Grade 3 or 4 diarrhea, nausea and vomiting, mucositis, and neutropenia in patients who received a combination of GM-CT-01 and 5-FU, compared to 5-FU alone, as shown in the following table:



**Figure 13: Safety Data In Colorectal Cancer Studies**

Event in percent of patients (%)	5-FU/LV Studies N=1128	5-FU+GM-CT-01 N=57
Adverse Events	Grade 3-4 (%)	Grade 3-4(%)
Diarrhea	12-40	0
Nausea/Vomiting	4-9	<2
Mucositis	17-22	<2
Neutropenia/ Leukopenia	7-67	<2

Source: Company reports

### **Phase I Study**

The Phase I study was designed to determine the safety of GM-CT-01. Forty patients were dosed with GM-CT-01 alone in Cycle 1. Of the 40 patients, 28 were dosed with GM-CT-01 plus 5-FU through Cycle 2. The drug was found to be well tolerated, and dose-limiting toxicity was not identified in this trial. The pharmacokinetics of 5-FU in patients showed that 5-FU exposure was somewhat enhanced in patients taking GM-CT-01.

### **Phase II Study: DAVFU-003**

In the first Phase II study (DAVFU-003) of 20 metastatic colorectal cancer patients, 280 mg/m<sup>2</sup> of GM-CT-01 was dosed with 500 mg/m<sup>2</sup> 5-FU in monthly cycles. Patients selected for this trial had metastatic carcinoma of the colon or rectum where the tumor had failed to respond to or progressed despite standard second- or third-line chemotherapy. The median estimated survival time among the 20 patients was 28.8 weeks, or 6.7 months, which was similar to Avastin studies and favorable to 4.6 months in historical controls without Avastin.

### **Phase II Study: DAVFU-006**

A second Phase II trial (DAVFU-006) was begun to study the combination of this drug candidate with Avastin. After 10 subjects had been enrolled, the study was terminated due to a lack of financial resources available to the Sponsor.

### **Awaiting Partnership For U.S. Development**

The company has discussed a Phase III design with the FDA that involves comparing standard therapy with and without the addition of GM-CT-01 in second-line patients. Given the expense of these studies and the competition in the colorectal cancer arena, we believe Galectin Therapeutics will likely wait for a partner with which to conduct these studies. However, the company is looking to commercialize the drug in countries where the cost of medical therapies prevents widespread usage of expensive therapies like Avastin. We believe GALT will be able to sign a partnership that enables it to advance this drug into Phase III trials in the U.S.



### ***Commercialization Possible Soon In Latin America***

For example, the government of Colombia, in concert with key oncology opinion leaders in that country, are working with the company to make GM-CT-01 available for use in patients with metastatic colorectal cancer. 5-FU is used extensively in Colombia, while targeted therapies like Avastin are prohibitively costly. However, the associated side effects of therapy with 5-FU often result in a dosage reduction or patients forgoing therapy altogether. Therefore, an improved side effect profile is very important to physicians and patients.

Galectin Therapeutics is partnering with Pro-Caps, a Colombian-based pharmaceutical company. Pro-Caps has submitted an application to the Colombian regulatory agency, INVIMA, for approval to market GM-CT-01 for therapy in combination with 5-FU in patients with metastatic colorectal cancer. We expect a decision by INVIMA on the clinical portion of the application in 2011 and on the technical portion (chemistry, manufacturing, and control) in early 2012. Assuming that approval is obtained based on these data, Colombia has reciprocity agreements on approved drugs with 12 other Latin American countries, meaning that Galectin Therapeutics should be able to market this drug in several Latin American countries.

## **Key Catalysts**

- The company is expected to initiate a Phase I/II program in collaboration with the Ludwig Institute for Cancer Research in Belgium. The purpose of this study is to investigate the immunological mechanism of the drug and evaluate patients with advanced metastatic melanoma. We expect the trial to begin in September 2011 and to start yielding results in mid-2012.
- Galectin Therapeutics is pursuing registration of GM-CT-01 in select international markets. Galectin's partner in Colombia, Pro-Caps, has submitted an application to the Colombian regulatory agency, INVIMA, for approval of this drug candidate in combination with 5-FU in patients with metastatic colorectal cancer. We expect final approval in Q112.
- While the company is currently focused primarily on the fibrosis program and commercializing GM-CT-01 internationally, it could potentially sign a partnership in 2012 to enable Phase III testing of GM-CT-01 in Phase III trials in colorectal cancer.
- We expect the company to initiate a Phase I study by mid-2012 with results to trickle in starting in H113. Even a Phase I trial in patients severely affected by liver fibrosis could yield meaningful efficacy results in our opinion. Because the company has already conducted trials with other, similar drugs, we are not concerned about safety. An efficacy signal from that trial should provide significant momentum to Galectin Therapeutics' story.

## **Competition**

We analyzed competition for Galectin therapeutics in two different ways. Firstly, from the point of technology competition and therapeutic competition. On the technology front, we believe there is very little competition for Galectin therapeutics. We have found no other pharmaceuticals that have done any clinical trials with Galectin targeting therapeutics as a class. Because there are many individual galectin molecules that can be targeted, an antibody approach will likely not work unless a cocktail of antibodies were used which could be expensive and very tough to develop clinically.

On the therapeutic front, we believe there is significant competition in the cancer area, and therefore assume in our modeling that Galectin therapeutics will only get a small market share even if a drug candidate is successful through clinical trials and gets approved. The company is significantly ahead in its research and its depth of research compared to other companies that have any galectin-based therapeutics like MandalMed (which has had an N-Terminally Truncated Galectin-3 in the preclinical stage for over a decade), or Galecto Biotech (a private company in Sweden which is working on synthetic small molecules in discovery stage).

In liver fibrosis, we have determined that competition for Galectin Therapeutics is limited. We are not too concerned about competition, as: (1) we believe several drugs will likely be used in combination for the treatment of liver fibrosis; and (2) because the company's galectin inhibitors are broken down into water and carbon dioxide mostly (being largely constructed of carbohydrate chains), the safety and tolerability (and, therefore, the combinability) of Galectin Therapeutics' drugs, in our opinion, will likely be far superior.

The following paragraphs identify the company's competitors and their current activities in the treatment of liver fibrosis:

- FibroGen

Fibrogen, based in San Francisco, is a private company. Fibrogen is developing FT-3019, a monoclonal antibody to connective tissue growth factor (CTGF). CTGF has been shown to have a role in liver fibrosis. CTGF is known to be overexpressed in fibrosis; elevated levels of CTGF have been observed in patients with various chronic liver diseases, including viral and alcoholic hepatitis, NASH, biliary atresia, and idiopathic portal hypertension. The company started a Phase II trial in Asian patients with Hepatitis B and fibrosis on October 2010 and is expecting to complete the trial in December 2013. We know that CTGF knockout mice demonstrate severe vascular and developmental effects, showing a broad function for this factor. Therefore, complete CTGF inhibition could lead to severe unwanted side-effects. Of Fibrogen's four areas of disease development, fibrotic diseases seem to be the least significant.

- ViroBay

ViroBay is a private biotechnology company based in Menlo Park, CA, that is developing an oral cathepsin B inhibitor called VBY-376. This is one of six drugs ViroBay has in clinical development. With this drug candidate, the company has shown, post-treatment, a reduction in collagen accumulation in toxin-induced fibrosis in rats. There is some evidence from knockout mice models that Cathepsin B has a role in liver cell apoptosis and injury. The company is currently developing this drug in Phase I trials that are in the process of completion. However, since this is a small molecule drug candidate, we believe there is a higher chance of toxicity issues because of off-target effects, as well as metabolites.

- Angion Biomedica Group.

Angion is developing Hepatocyte Growth Factor (HGF) for the treatment of fibrosis; this is one of six targeted technologies the company is working on. Angion is expected to begin Phase I studies soon. Preclinical data from this drug candidate is not yet public, but we are assuming there were positive results that prompted the company to progress to Phase I studies. We believe there could be a significant side-effect issue that might affect the progress of this drug candidate, as promoting growth of hepatocytes can potentially lead to hepatocellular carcinoma, which is a major complication of cirrhosis in the first place.

- Intercept Pharmaceuticals

Intercept Pharmaceuticals has completed Phase II trials with an FXR agonist in Primary biliary cirrhosis (PBC), which showed efficacy with primary endpoint of reduction in Alk Phos. Since there is little evidence of a correlation between Alk Phos levels and fibrosis, we are skeptical of efficacy through this approach. A Phase II trial in patients with Type 2 Diabetes/NAFLD is ongoing.

- 7TM Pharma

Some other companies and private investigators are working on liver fibrosis drug candidates, but we believe those drugs are less promising than the ones we mention above. And, although several drugs could potentially be utilized for the treatment of liver fibrosis, approvability, in our opinion, is a much more important driver of valuation than a drug candidate's competitive profile.

Still, we believe Galectin Therapeutics has several key advantages over its competitors:

1. Apart from Cathepsin B knockouts, there is little evidence to suggest that any of the other candidates being developed are working on a pathway that is critical in the development of liver fibrosis. Versus its competitors, we believe Galectin Therapeutics has the best scientific proof that it is working on the right target.
2. Because Galectin Therapeutics' drugs have metabolites that are easily excreted from the body, and because we know the company's drugs have a very safe profile from Phase II clinical trials, we believe Galectin Therapeutics holds a significant advantage over its peers. In our opinion, this advantage will likely become even more meaningful if and when the drug candidates are tested in less and less severe patients, and these drug candidates are dosed chronically.
3. Galectin Binding: Galectin Therapeutics' carbohydrate drug candidates avidly bind to multiple molecules of galectin per molecule of drug and bind both galectin-1 and galectin-3, the two most prominent galectins involved in pathological processes. These drug candidates selectively target extracellular galectins.
4. Because of their high molecular weight and low blood metabolism, these drug candidates circulate in the blood for a prolonged time.

5. The company's drug candidates are metabolized to harmless carbon dioxide and water.
6. We believe Galectin Therapeutics is the only firm focused primarily on the treatment of liver fibrosis; in our opinion, this strategy will help the company proceed faster in the development of its drug candidates.

## Management

- Peter Traber, M.D., has been the President and CEO of Galectin since March 2011 and the company's Chief Medical Officer since June 2010. He was the CEO of Baylor College of Medicine in Houston, Texas, from 2003 to 2008, and the SVP of Clinical Development and Medical Affairs and CMO of GlaxoSmithKline plc from 2000 to 2003. Previously, Dr. Traber was CEO of the University of Pennsylvania Health System, and Chair of the Department of Internal Medicine and Chief of Gastroenterology at the University of Pennsylvania School of Medicine. Dr. Traber has published over 100 articles of original research, reviews, and book chapters. Dr. Traber received his M.D. from Wayne State School of Medicine and his B.S. in chemical engineering from the University of Michigan.
- Anatole Klyosov, Ph.D., D.Sc., was one of the founders of the company and has been its Chief Scientist since 2000. In our conversations with management, we found Dr. Klyosov to be very enthusiastic about the technology platform, which we believe is an essential ingredient for the long-term success of any technology. Prior to Galectin Therapeutics, he was VP of R&D at Kadant Composites, Inc., from 1996 to 2000. Dr. Klyosov was a Visiting Professor of Biochemistry, Center for Biochemical and Biophysical Sciences at Harvard Medical School, from 1990 to 1998, and Professor and Head of the Carbohydrates Research Laboratory at the A.N. Bach Institute of Biochemistry, USSR Academy of Sciences, from 1981 to 1990. Dr. Klyosov has published more than 250 peer-reviewed articles in scientific journals, written books on enzymes, carbohydrates, and biotechnology, and edited two books, *Carbohydrates in Drug Design* and *Galectins*. Dr. Klyosov earned his Ph.D. and D.Sc. degrees in physical chemistry and an M.S. degree in enzyme kinetics from Moscow State University.
- Eliezer Zomer, Ph.D., has served as the company's executive VP of Manufacturing and Product Development since 2003. Because of the importance of the specialized manufacturing needed for carbohydrate-based drugs, we believe Dr. Zomer's expertise in this area is of considerable value to the firm. Prior to his engagement with Galectin Therapeutics, Dr. Zomer was the founder of Alicon Biological Control from 2000 to 2002. He was Vice President of product development at SafeScience, Inc., from 1998 to 2000, and VP of R&D at Charm Sciences, Inc., from 1987 to 1998. Dr. Zomer received a B.Sc. in industrial microbiology from the University of Tel Aviv and a Ph.D. in biochemistry from the University of Massachusetts; his post-doctoral studies took place at the National Institutes of Health.
- Anthony D. Squeglia has held the CFO role at Galectin Therapeutics since October 2007, and has been its VP of Investor Relations since 2003. Prior to his role at Galectin Therapeutics, Mr. Squeglia was a partner at JFS Advisors, a management consulting firm that delivers strategic services to entrepreneurial businesses. In addition, he has held management positions at Quentra/Coyote Networks, Summa Four, Unisys, AT&T, Timeplex, Colonial Penn, and ITT. Mr. Squeglia earned an M.B.A. from Pepperdine University and a B.B.A. from The Wharton School, University of Pennsylvania.
- Maureen E. Foley has been the COO of Galectin therapeutics since 2001. Ms. Foley has 30 years of business and operations management experience in various areas, including facility design, construction and fit out,

project management, IT, HR, press and public relations, and accounting and finance for start-up companies. Between 1999 and 2000, she managed business operations for eHealthDirect, Inc., a developer of medical records processing software, and ArsDigita, Inc., a web development company. From 1996 to 1999, Ms. Foley was Manager of Operations with Thermo Fibergen, Inc., a subsidiary of Thermo Fisher Scientific, Inc. Ms. Foley is a graduate of The Wyndham School, Boston, Massachusetts, with a major in mechanical engineering.

- Dr. Scott Friedman, a pioneer in the field of liver fibrosis, is one of Galectin Therapeutics' advisors. Dr. Friedman is a Professor of Medicine and Chief of Liver Diseases at Mount Sinai School of Medicine. He has performed ground-breaking research into the underlying causes of scarring, or fibrosis, associated with chronic liver disease, which affects millions worldwide. Dr. Friedman was among the first to isolate and characterize the hepatic stellate cell, which is the key cell type responsible for scar production in the liver.

## Financial Snapshot

At the end of the first quarter, on March 31, 2011, Galectin Therapeutics had \$6.9 million of cash and equivalents available to fund future operations. In addition, based on the company's recent financing activities, we expect it to have sufficient capital to fund operations through 2012.

In 1Q11, Galectin reported a net loss of \$2.7 million, or (\$0.04) per share, basic and diluted, compared to a net loss of \$2.8 million, or (\$0.06) per share, for the same period in 2010. 1Q11 included a non-cash charge of \$0.4 million related to the change in the fair value of warrants, versus a charge of \$1.1 million in 2010. R&D expense for 1Q11 was \$0.7 million, and G&A expense was \$1.3 million.

Please see the following pages for our projections of Galectin Therapeutics' income, balance sheet, and cash flow statements.

### Public Companies Mentioned in this Report:

BioMarin Pharmaceutical Inc. (BMRN/NASDAQ-\$29.25-Hold)

GlaxoSmithKline PLC (GSK/NYSE-\$43.44-Not Rated)

ImmunoGen, Inc. (IMGN/NASDAQ-\$15.05-Buy)

Isis Pharmaceuticals (ISIS/NASDAQ-\$9.22-Buy)

Nektar Therapeutics (NKTR/NASDAQ-\$7.43-Buy)

Income Sheet (\$in millions)	2010A	Q111A	Q211E	Q311E	Q411E	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Revenues															
Revenues	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.7	136.9	207.6	272.0	297.0	324.4
<b>Total Revenues</b>	<b>0.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>62.7</b>	<b>136.9</b>	<b>207.6</b>	<b>272.0</b>	<b>297.0</b>	<b>324.4</b>
Operating Expenses															
COGS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	9.6	14.5	19.0	20.8	22.7
R&D	1.1	0.7	0.6	1.2	1.8	4.3	10.2	13.7	15.8	17.4	19.1	21.0	23.1	25.4	28.0
SG&A	3.8	1.3	1.3	1.3	1.3	5.2	5.5	5.8	6.1	12.5	27.4	41.5	54.4	59.4	64.9
Other															
Total Operating Expenses	4.9	2.0	1.9	2.5	3.1	9.5	15.7	19.5	21.9	34.3	56.1	77.1	96.6	105.6	115.6
<b>Operating Income</b>	<b>(4.9)</b>	<b>(2.0)</b>	<b>(1.9)</b>	<b>(2.5)</b>	<b>(3.1)</b>	<b>(9.5)</b>	<b>(15.7)</b>	<b>(19.5)</b>	<b>(21.9)</b>	<b>28.4</b>	<b>80.8</b>	<b>130.5</b>	<b>175.4</b>	<b>191.4</b>	<b>208.8</b>
Interest and Other Income	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Interest Expense	0.0	-0.4	-0.4	-0.4	-0.4	-1.6	-1.7	-1.7	-1.8	-2.1	-2.5	-2.6	-2.7	-2.9	-3.0
Other	-0.8														
Income Before Taxes	-5.6	-2.4	-2.2	-2.9	-3.6	-11.1	-17.4	-21.2	-23.7	26.3	78.3	127.9	172.7	188.5	205.8
Taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Net Income</b>	<b>(5.6)</b>	<b>(2.4)</b>	<b>(2.2)</b>	<b>(2.9)</b>	<b>(3.6)</b>	<b>(11.1)</b>	<b>(17.4)</b>	<b>(21.2)</b>	<b>(23.7)</b>	<b>26.3</b>	<b>78.3</b>	<b>127.9</b>	<b>172.7</b>	<b>188.5</b>	<b>205.8</b>
Preferred stock dividends	-0.9	-0.3	-0.3	-0.3	-0.4	-1.4	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5	-1.5
Preferred stock accretion	-2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Income (shareholders)	-8.7	-2.7	-2.6	-3.3	-3.9	-12.5	-18.9	-22.7	-25.2	24.8	76.8	126.4	171.2	187.0	204.3
<b>EPS</b>	<b>-0.15</b>	<b>-0.04</b>	<b>-0.03</b>	<b>-0.04</b>	<b>-0.05</b>	<b>-0.17</b>	<b>-0.21</b>	<b>-0.24</b>	<b>-0.25</b>	<b>0.27</b>	<b>0.76</b>	<b>1.18</b>	<b>1.51</b>	<b>1.57</b>	<b>1.63</b>
Shares outstanding	56.3	66.9	74.2	75.7	79.0	74.0	81.4	89.5	94.0	98.7	103.6	108.8	114.2	119.9	125.9

Source: Company Reports and Morgan Joseph TriArtisan LLC estimates

Severe Liver Market	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Patient Market	61,000	64,050	67,253	70,615	74,146	77,853	81,746	85,833	90,125	94,631	99,363
Drug cost (\$/year)	98,012	101,932	106,010	110,250	114,660	119,247	124,016	128,977	134,136	139,502	145,082
Annual \$ market (\$ million)	5,979	6,529	7,129	7,785	8,502	9,284	10,138	11,071	12,089	13,201	14,416
Peak Penetration	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Peak Sales (\$ million)	1,793.6	1,958.6	2,138.8	2,335.6	2,550.5	2,785.1	3,041.3	3,321.2	3,626.7	3,960.4	4,324.7
Drug Inflation	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patient market growth	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Value (\$ million)									21,760	23,762	25,948
Present Value (\$million)	3,651	4,563	5,704	7,130	8,913	11,141	13,927	17,408			
Years to approval	5										
Years to peak from approval	3										
Total years to peak	8										
Peak Year	2018										
Sales Multiple	6										
Source: Morgan Joseph TriArtisan	25%										
Probability of approval	25%										
Profitability to company	30%										
<b>Prob. Adj. value (\$ million)</b>	<b>342</b>										

Source: Morgan Joseph TriArtisan LLC estimates



<b>Colorectal Cancer</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>
Patient Market	106,100	111,405	116,975	122,824	128,965	135,413	142,184	149,293	156,758	164,596	172,826
Drug cost (\$/year)	24,000	24,960	25,958	26,997	28,077	29,200	30,368	31,582	32,846	34,159	35,526
Annual \$ market (\$ million)	2,546	2,781	3,036	3,316	3,621	3,954	4,318	4,715	5,149	5,623	6,140
Peak Penetration	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Peak Sales (\$ million)	254.6	278.1	303.6	331.6	362.1	395.4	431.8	471.5	514.9	562.3	614.0
Drug Inflation	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Patient market growth	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%	5%
Value (\$ million)									3,089	3,374	3,684
Present Value (\$million)	995	1,114	1,248	1,397	1,565	1,753	1,963	2,199			
Years to approval	6										
Years to peak from approval	4										
Total years to peak	10										
Peak Year	2020										
Sales Multiple	6										
Discount Rate	12%										
Probability of approval	35%										
Profitability to company	15%										
<b>Prob. Adj. value (\$ million)</b>	<b>58</b>										

Source: Morgan Joseph TriArtisan LLC estimates

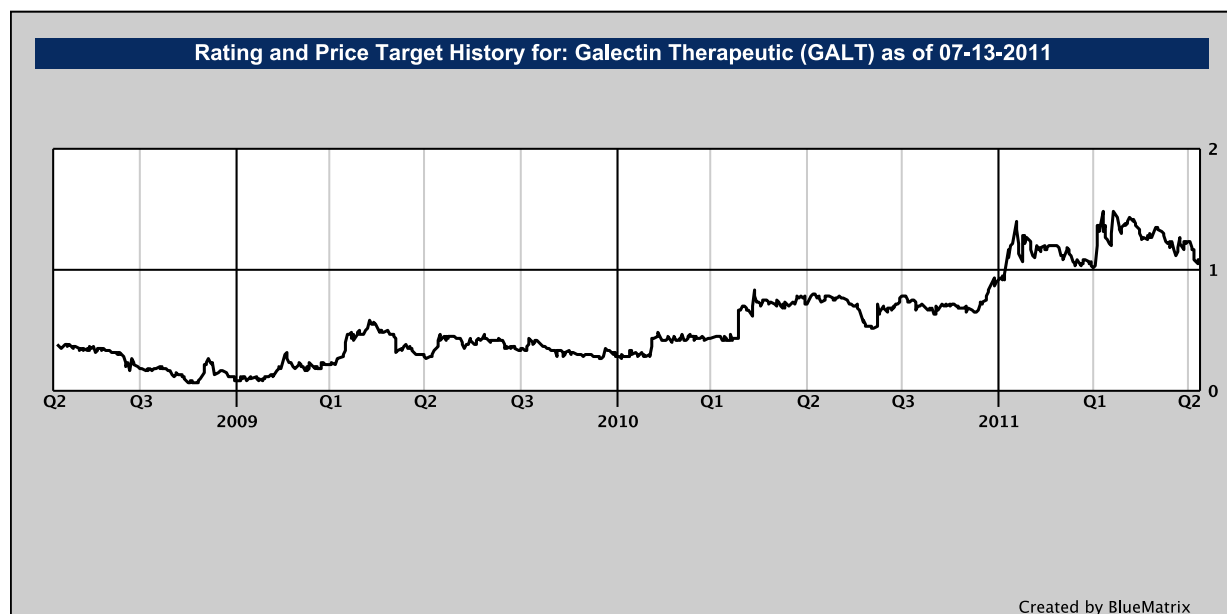
Balance Sheet (\$ in millions)	Dec-09A	Dec-10A	Dec-11E	Dec-12E	Dec-13E	Dec-14E	Dec-15E	Dec-16E	Dec-17E	Dec-18E	Dec-19E	Dec-20E
Assets												
Current Assets												
Cash And Cash Equivalents	0.3	5.9	7.3	8.9	4.7	1.8	32.6	106.7	230.7	399.5	582.9	782.4
Receivable	-	0.2	0.3	0.5	0.6	0.8	1.7	2.5	3.5	4.4	5.5	6.5
Prepaid expenses and other	0.1	0.1	(0.0)	(0.0)	(0.0)	0.0	0.0	0.1	0.1	0.1	0.1	0.2
Total Current Assets		6.2	7.6	9.4	5.3	2.6	34.3	109.3	234.3	404.0	588.6	789.1
Property Plant and Equipment	0.0	0.0	0.0	0.5	1.1	7.6	15.2	23.9	33.9	45.4	58.7	73.9
Restricted cash	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Intangible assets, net	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Assets</b>		<b>6.3</b>	<b>7.7</b>	<b>9.9</b>	<b>6.4</b>	<b>10.4</b>	<b>49.6</b>	<b>133.3</b>	<b>268.3</b>	<b>449.6</b>	<b>647.3</b>	<b>863.1</b>
Liabilities												
Current Liabilities												
Accounts Payable	0.2	0.1	0.1	0.3	0.4	0.5	1.3	2.9	5.4	8.7	12.3	16.2
Accrued Expenses	0.8	0.5	0.5	0.5	0.5	0.5	1.1	2.2	4.0	6.2	8.7	11.5
Accrued Dividend Payable	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Deferred Revenue	-	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Warrant Liabilities	-	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total Current Liabilities	1.1	1.8	1.8	1.9	2.0	2.2	3.5	6.3	10.5	16.0	22.1	28.7
Warrant Liabilities	1.6	-	-	-	-	-	-	-	-	-	-	-
Other Liabilities	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total Liabilities</b>	<b>3.0</b>	<b>1.8</b>	<b>1.8</b>	<b>1.9</b>	<b>2.1</b>	<b>2.2</b>	<b>3.5</b>	<b>6.3</b>	<b>10.5</b>	<b>16.1</b>	<b>22.1</b>	<b>28.7</b>
Stockholders' Equity	Source: Morgan Joseph TriArtisan LLC estimates											
Convert Series B-1	1.3	1.7	1.7	1.7	-	-	-	-	-	-	-	-
Convert Series B-2	0.6	2.5	2.5	2.5	2.5	-	-	-	-	-	-	-
Series C	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Series A	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Common Stock	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Additional Paid in Capital	42.5	54.0	64.4	81.6	98.5	126.0	135.0	135.0	135.0	135.0	135.0	135.0
Accumulated Deficit	(47.7)	(56.4)	(65.4)	(80.5)	(99.4)	(120.6)	(91.7)	(10.7)	120.1	295.8	487.5	696.6
<b>Total Stockholder Equity</b>	<b>(1.7)</b>	<b>4.5</b>	<b>5.9</b>	<b>8.0</b>	<b>4.4</b>	<b>8.2</b>	<b>46.1</b>	<b>127.1</b>	<b>257.8</b>	<b>433.5</b>	<b>625.2</b>	<b>834.3</b>
<b>Total liabilities and stockholders equity</b>	<b>4.467</b>	<b>6.3</b>	<b>7.7</b>	<b>9.9</b>	<b>6.4</b>	<b>10.4</b>	<b>49.6</b>	<b>133.3</b>	<b>268.3</b>	<b>449.6</b>	<b>647.3</b>	<b>863.1</b>

Source: Company Reports and Morgan Joseph TriArtisan LLC estimates

Cash Flow Statement (\$ in millions)	2009A	2010A	2011E	2012E	2013E	2014E	2015E	2016E	2017E	2018E	2019E	2020E
Operating Cash Flows												
Net Income	(7.5)	(5.6)	(11.1)	(17.4)	(21.2)	(23.7)	26.3	78.3	127.9	172.7	188.5	205.8
Depreciation and amortization	0.0	0.0	0.1	0.1	0.1	0.6	0.7	0.8	0.9	1.1	1.2	1.4
Stock-based compensation expense	1.6	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.9	3.0	3.2	3.3
Change in fair value of warrant liabilities	1.4	-	-	-	-	-	-	-	-	-	-	-
Write off of intangible assets	0.2	-	-	-	-	-	-	-	-	-	-	-
Changes in operating assets and liabilities:												
Grant receivable	-	(0.2)	-	-	-	-	-	-	-	-	-	-
Accounts receivables	-	-	(0.1)	(0.1)	(0.2)	(0.2)	(0.8)	(0.9)	(0.9)	(1.0)	(1.0)	(1.1)
Prepaid expenses and other current assets	0.0	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Accounts payable	0.1	(0.1)	0.1	0.1	0.1	0.1	0.8	1.6	2.5	3.3	3.6	3.9
Accrued expenses	-	-	-	-	-	-	0.5	1.1	1.7	2.3	2.5	2.7
Other long-term liabilities	0.3	(0.3)	-	-	-	-	-	-	-	-	-	-
<b>Total Cash Flow From Operating Activities</b>	<b>(3.9)</b>	<b>(4.4)</b>	<b>(8.9)</b>	<b>(15.0)</b>	<b>(18.8)</b>	<b>(20.6)</b>	<b>30.0</b>	<b>83.7</b>	<b>135.0</b>	<b>181.3</b>	<b>198.0</b>	<b>216.1</b>
Investing Cash Flows												
Capital Expenditures	-	-	(0.1)	(0.5)	(0.7)	(7.2)	(8.3)	(9.5)	(11.0)	(12.6)	(14.5)	(16.7)
Investments	-	-	-	-	-	-	-	-	-	-	-	-
Other Cashflows from Investing Activities	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total Cash Flows From Investing Activities</b>	<b>-</b>	<b>-</b>	<b>(0.1)</b>	<b>(0.5)</b>	<b>(0.7)</b>	<b>(7.2)</b>	<b>(8.3)</b>	<b>(9.5)</b>	<b>(11.0)</b>	<b>(12.6)</b>	<b>(14.5)</b>	<b>(16.7)</b>
Financing Cash Flows												
Sale Purchase of Stock	3.8	8.7	10.4	17.2	15.2	25.0	9.0	-	-	-	-	-
Other Cash Flows from Financing Activities	-	-	-	-	-	-	-	(0.0)	0.0	-	-	-
<b>Total Cash Flows From Financing Activities</b>	<b>3.8</b>	<b>8.7</b>	<b>10.4</b>	<b>17.2</b>	<b>15.2</b>	<b>25.0</b>	<b>9.0</b>	<b>(0.0)</b>	<b>0.0</b>	<b>-</b>	<b>-</b>	<b>-</b>
Effect Of Exchange Rate Changes	-	-	-	-	-	-	-	-	-	-	-	-
<b>Change In Cash and Cash Equivalents</b>	<b>(0.1)</b>	<b>4.4</b>	<b>1.4</b>	<b>1.6</b>	<b>(4.3)</b>	<b>(2.8)</b>	<b>30.7</b>	<b>74.2</b>	<b>124.0</b>	<b>168.7</b>	<b>183.5</b>	<b>199.4</b>

Source: Company Reports and Morgan Joseph TriArtisan LLC estimates

## Required Disclosures



### Price Target

Our price target is \$6 per share.

### Valuation Methodology

We calculate an intrinsic value of approximately \$6 per share for Galectin Therapeutics through our sum-of-parts methodology, in which we assign a per-share value to the company's liver fibrosis pipeline, oncology pipeline, and technology using an 89.5 million share count (in 2013), assuming meaningful dilution from current levels.

### Risk Factors

**Financial Risks.** The company may need financing to sustain and grow its pipeline, which could be dilutive to current shareholders.

**Clinical Risks.** Drugs in pre-clinical and clinical trials may not advance because of inadequate safety, efficacy, or because a determination of efficacy or safety cannot be made.

**Regulatory Risks.** Drugs may not gain approval from regulatory agencies such as the FDA, EMEA, or INVIMA.

**Competition.** Although competition with galectin technologies is limited, We expect competition for Galectin Therapeutics' drugs from many public and private companies developing pharmaceuticals using disparate technologies.

**Reimbursement Risk.** Sales of Galectin therapeutics' drugs will likely be highly dependent on reimbursement from private insurers as well as government agencies. Success of an approved drug will depend on reimbursement, which can depend on the strength of clinical data.

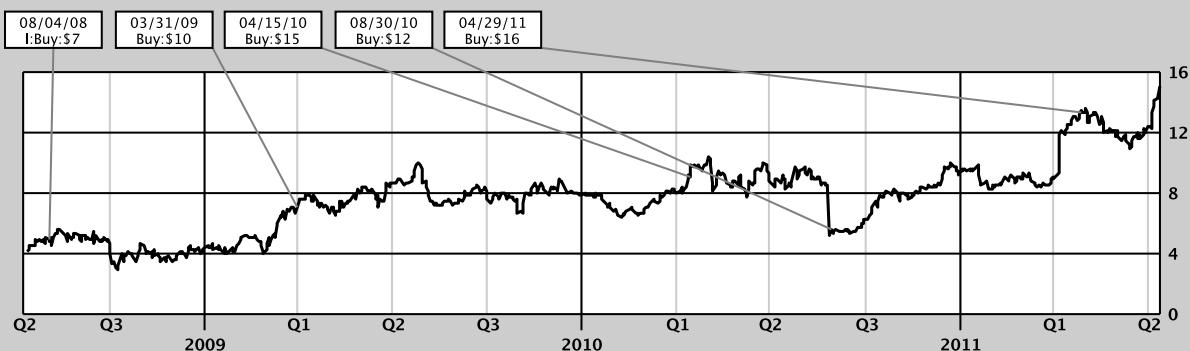
**Collaborative Risk.** Galectin Therapeutics may have little or no control over partnered programs, and since interests of collaborative partners such as may not be aligned with those of the company's shareholders.

### Rating and Price Target History for: BioMarin Pharmaceutical Inc. (BMRN) as of 07-13-2011

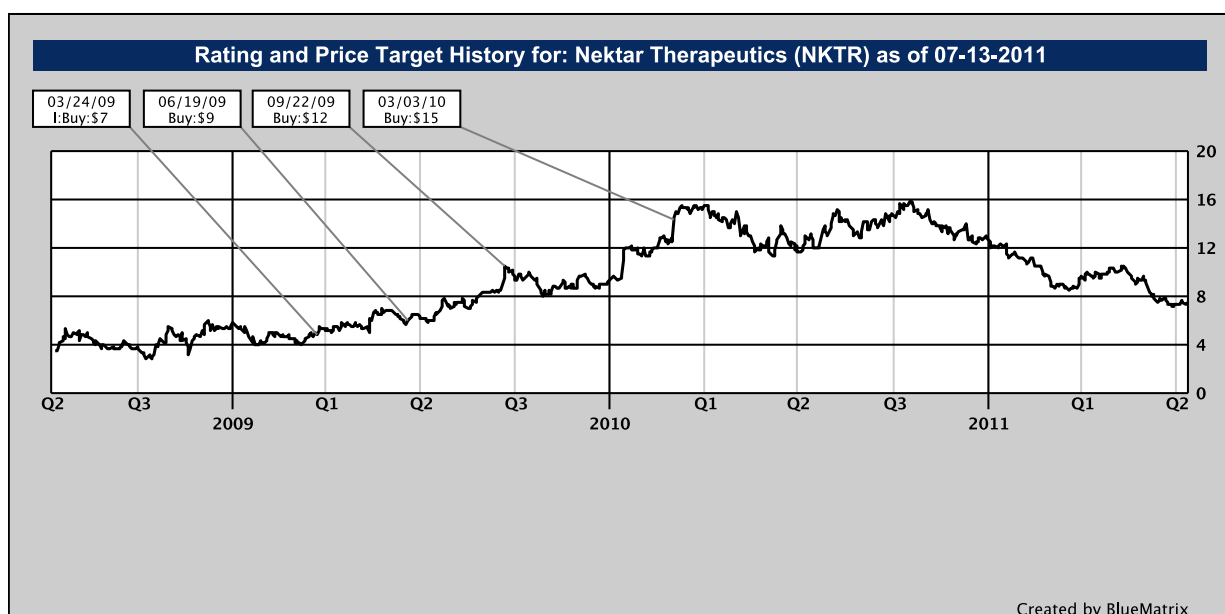
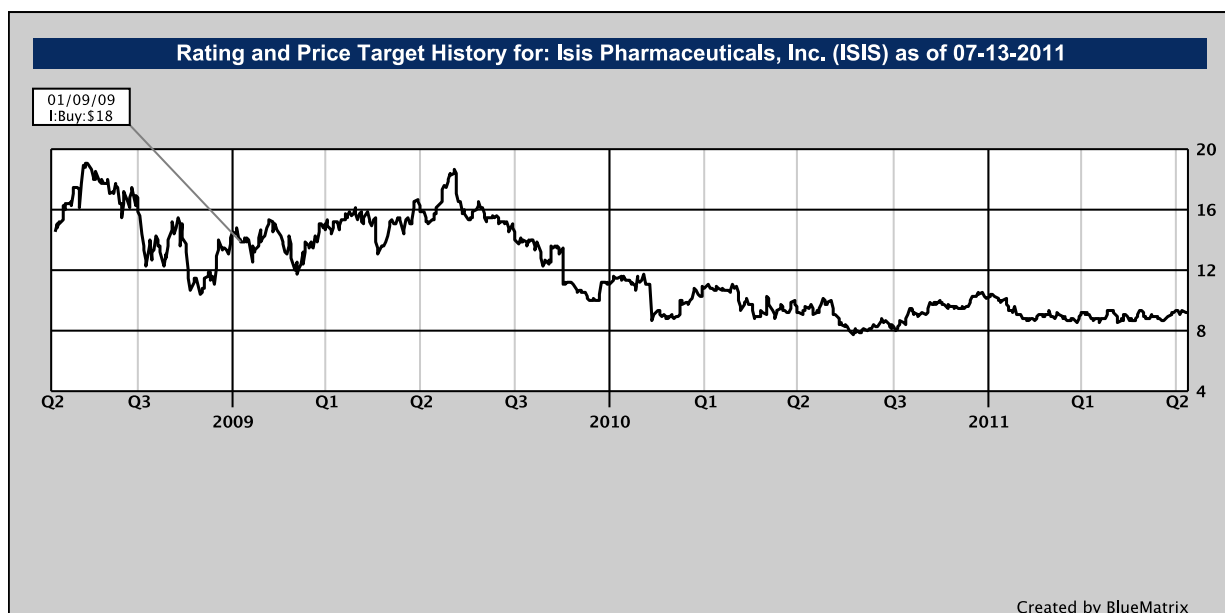


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### Rating and Price Target History for: ImmunoGen, Inc. (IMGN) as of 07-13-2011



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I, Shiv Kapoor, the author of this research report, certify that the views expressed in this report accurately reflect my personal views about the subject securities and issuers, and no part of my compensation was, is, or will be directly or indirectly tied to the specific recommendations or views contained in this research report.

Research analyst compensation is dependent, in part, upon investment banking revenues received by Morgan Joseph TriArtisan LLC.

Morgan Joseph TriArtisan LLC intends to seek or expects to receive compensation for investment banking services from the subject company within the next three months.

Morgan Joseph TriArtisan LLC makes a market in the shares of IMGN.

Morgan Joseph TriArtisan LLC has received compensation for investment banking services from ImmunoGen Inc. within the past 12 months.

Morgan Joseph TriArtisan LLC has managed or co-managed a public offering of securities for ImmunoGen Inc. within the past 12 months.

Rating	Investment Banking Services/Past 12 Mos.	
	Percent	Percent
BUY [B]	68.40	10.75
HOLD [H]	30.10	2.44
SELL [S]	1.50	0.00

#### Meaning of Ratings

- A) A Buy rating is assigned when we do not believe the stock price adequately reflects a company's prospects over 12-18 months.  
 B) A Hold rating is assigned when we believe the stock price adequately reflects a company's prospects over 12-18 months.  
 C) A Sell rating is assigned when we believe the stock price more than adequately reflects a company's prospects over 12-18 months.

#### Other Disclosures

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