Zacks Small-Cap Research

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Tekmira Pharmaceuticals (TKMR-NASDAQ)

TKMR: Enter into HBV market, on track to advance TKM-PLK1 and TKM-Ebola, Strong balance sheet--Outperform

Current Recommendation	**Outperform**
Prior Recommendation	N/A
Date of Last Change	03/11/2013
Current Price (10/08/13)	$10.08
Twelve- Month Target Price	**$18.00**

OUTLOOK

Tekmira is a development stage biotech company. We are optimistic about the great potential of the Company's LNP delivery technology, which enables the systemic delivery of RNAi drug candidates. Tekmira has built a diversified pipeline which targets multiple indications including cancers and infections. Lead drug candidate TKM-PLK1 is in Phase I/II clinical trials. Government sponsored TKM-Ebola is under accelerated "Animal Rule" development. Partnerships should build shareholder value in a rapid and cost-effective way.

We continue to rate the Company's shares Outperform and raise our PT to $18 per share.

SUMMARY DATA

52-Week High	**$5.91**
52-Week Low	**$3.22**
One-Year Return (%)	**48.55**
Beta	**0.15**
Average Daily Volume (sh)	**101,214**
Shares Outstanding (mil)	**14**
Market Capitalization ($mil)	**$81**
Short Interest Ratio (days)	**0.14**
Institutional Ownership (%)	**20**
Insider Ownership (%)	**6**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**9.6**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using 2013 Estimate	**N/A**
P/E using 2014 Estimate	**N/A**
Zacks Rank	**N/A**

Risk Level	**Average,**
Type of Stock	**Small-Growth**
Industry	**Med-Biomed/Gene**
Zacks Rank in Industry	**N/A**

ZACKS ESTIMATES

Revenue
(in millions of $)

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2011	4.3 A	4.4 A	4.2 A	3.7 A	16.6 A
2012	3.6 A	3.6 A	3.0 A	3.9 A	14.1 E
2013	2.2 A	2.9 A	7.5 E	7.5 E	20.1 E
2014					17.5 E

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

	Q1 (Mar)	Q2 (Jun)	Q3 (Sep)	Q4 (Dec)	Year (Dec)
2011	-$0.30 A	-$0.34 A	-$0.14 A	-$0.17 A	-$0.92 A
2012	-$0.20 A	-$0.18 A	-$0.12 A	-$0.36 A	-$0.89 A
2013	-$0.18 A	-$0.22 A	-$0.03 E	-$0.13 E	-$0.55 E
2014					-$0.92 E

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

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WHAT'S NEW

Tekmira Enters into HBV Market

On October 8, 2013, Tekmira (TKMR) presented a webinar for the update of its pipeline. The big takeaway is that Tekmira is heading into anti hepatitis B (HBV) research area.

This is obviously a huge market and one that Tekmira feels their LNP delivery technology is ideally suited for.

Hepatitis B Virus (HBV) infection is highly prevalent worldwide, and represents a major global health problem. Two billion people globally have been infected with HBV, and approximately 350 million are chronic carriers, including approximately 1.5-2.2 million people in the US. Among the chronically infected, 15% - 40% will develop cirrhosis and/or hepatocellular carcinoma. Each year approximately 5000 people in the US and 1 million worldwide die from cirrhosis, liver failure or hepatocellular carcinoma resulting from HBV infection.

The chronic hepatitis B patient population still has substantial unmet medical needs that must be addressed for effective treatment and control of the disease. Current treatment regimens, based on interferons and antivirals, are not reliably effective in eradicating infection in chronically infected patients. These regimens are often rendered ineffective by the emergence of resistant strains of the virus and suffer from problematic dosing schedules and debilitating side effects that negatively impact patient compliance.

Current Treatments for HBV

In contrast to hepatitis C, the complete eradication of HBV from host hepatocytes cannot be achieved with currently available agents due to the persistence of HBV viral DNA within hepatocytes. The goal of therapy is to stop the progression of liver inflammation to fibrosis, cirrhosis, and cancer. Because these outcomes take decades to develop, treatment decisions are made on the basis of surrogate markers, including serum ALT levels, liver histology (as determined by biopsy), and measures of viral replication activity. The latter include serum viral load, serum levels of HBeAg and anti-HBe, and to a lesser extent, serum levels of HBsAg and anti-HBs.

The elimination of HBeAg and the appearance of anti-HBe (HBe seroconversion) are associated with a reduced rate of progression of liver disease and liver-related mortality, irrespective of whether it occurs spontaneously or as the result of treatment. Patients who subsequently eliminate HBsAg and become anti-HBs positive (HBsAg seroconversion) have a dramatically reduced risk of viral relapse compared to those with HBeAg seroconversion only. Such patients are for the most part considered **functionally cured.** Unfortunately, HBsAg seroconversion is rarely achieved with currently available treatment regimens.

Currently **seven drugs** are available in the US for the treatment of HBV. They are classified as two classes:

- **Interferons** include Pegasys and Intron A,
- **Nucleosides/Nucleosides** include Lamivudine, Telbivudine, Entecavir, Tenofovir, and Adefovir dipivoxil.

Brand Name	Generic Name	Company	Approval Year	Patent Expiration	2012 WW Sales
Pegasys	pegylated α-interferon-2a	Roche	2005	2018	$692M

Intron A	α-interferon-2b	Roche	1992	2002	< $5M
Viread	tenofovir	Gilead	2008	2018	$701M
Tyzeka	telbivudine	Novartis	2006	2019	$136M
Hepsera	Adenovir	Gilead	2002	2014	$108M
Epivir	lamivudine	GSK	1998	2010	$13M
Barraclude	entecavir	Bristol-Myers	2005	2015	$1388M

Drug	Admin.	Treatment Duration	Tolerability	Resistance Develop.	Efficacy of Treatment on		
					Viral Load	HBeAg	HBsAg
Pegasys	Sub-Q	1 Year	Poor	Very Good	Fair	Fair	Poor
Intron A	Sub-Q	1 Year	Poor	Very Good	Fair	Fair	Poor
Barraclude	Oral	Indefinite	Good	Good	Good	Poor	Poor
Tyzeka	Oral	Indefinite	Good	Fair	Good	Poor	Poor
Hepsera	Oral	Indefinite	Good	Good	Poor	Poor	Poor
Epivir	Oral	Indefinite	Good	Poor	Fair	Poor	Poor
Viread	Oral	Indefinite	Good	Good	Good	Poor	Poor

None of the above available treatment options offers a significant opportunity for HBsAg clearance, which is considered a **functional cure**.

Treatment with **peginterferon** provides a modest chance at a long term sustained response, but is associated with severe side effects in a treatment regimen that generally lasts a full year. **Nucleosides and nucleotides** dramatically reduce viral load and have a mild side effect profile, but must be taken for many years or for life, because viral rebound usually occurs when therapy is stopped. Furthermore, nucleotides have only a modest effect on other markers of infection such as HBeAg and HBsAg.

The observation that peginterferon is much more likely to provide a sustained post-treatment antiviral response than nucleotides in spite of its more modest effect on serum viral load, suggests that approaches that both reduce viral replication and accelerate clearance of infected hepatocytes are more likely to be successful in producing a post-treatment sustained response, HBeAg seroconversion, and possibly HBsAg seroconversion as well. A treatment that shared interferon's ability to enhance immune system-mediated clearance of infected hepatocytes without its severe side effect profile would be a valuable addition to the armamentarium of anti-HBV drugs.

The Potential for TKM-HBV

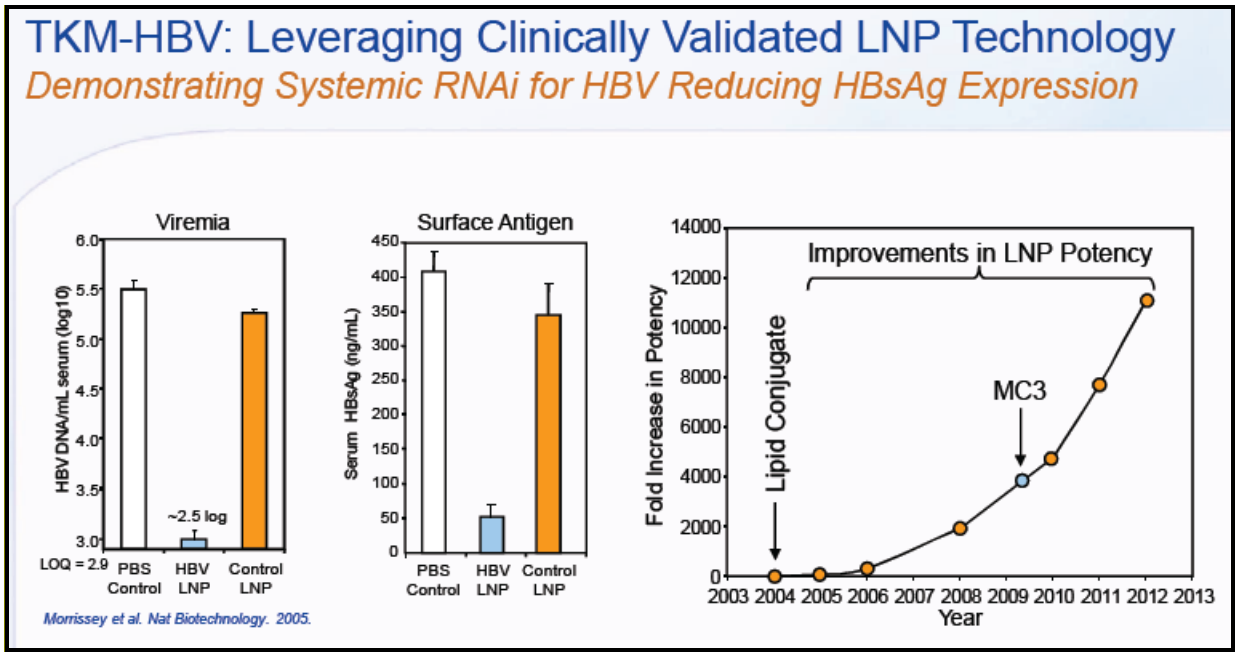
Apparently, HBV market represents a multi-billion dollar opportunity and current therapeutic regimes have limitations. There is an unmet medical need for HBV patients, especially for patients with chronic HBV infection. Any new medicine with increased efficacy and/or safety profile will be in high demand.

TKM-HBV is an RNAi therapeutic in development which may provide a meaningful alternative for the treatment of HBV. TKM-HBV is a multi-valent therapeutic targeting multiple sites in the HBV genome avoiding resistance. TKM-HBV is developed through bioinformatic analysis of 37,457 sequences derived from 4078 distinct HBV genomes. Multiple triggers in TKM-HBV provide broad coverage across genotypes C, A, B and D. TKM-HBV is designed to inhibit HBsAg expression, leading to seroconversion and functional cure.

TKM-HBV has a differentiated mechanism of action compared to that of existing anti-HBV drugs. The mechanism of RNA interference could provide a powerful new treatment for hepatitis B through the unique ability to specifically reduce the amount of circulating HBV antigens. Experts in the field of HBV therapeutics hypothesize that the large excess of viral proteins in chronic HBV patients functions to absorb antibodies that would otherwise neutralize the virus, and that potent reduction of HBV antigens would allow the patient's immune system to clear the infection, leading to a functional cure.

TKM-HBV is a third generation LNP product, leveraging Tekmira's improvements in both formulation and payload technology. TKM-HBV has demonstrated great efficacy in reducing HBV DNA and HBsAg expression in animal models.

Tekmira intends to complete preclinical work and file an IND for TKM-HBV 2H2014. Phase I data in chronically infected HBV patients will be available in 2015.



New Data Presented at NA-NETS Conference

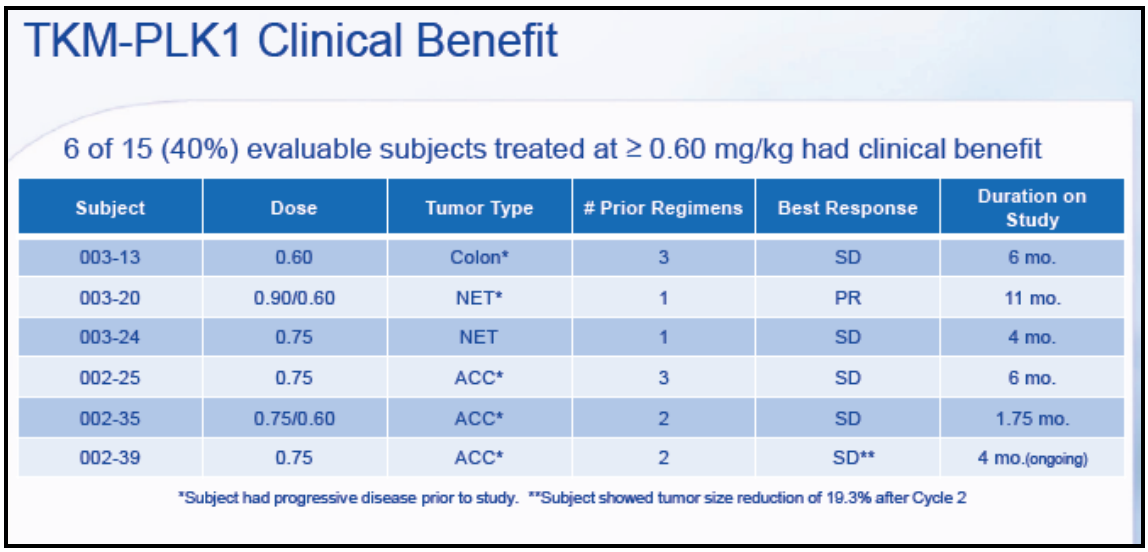
On October 4, 2013, Tekmira presented additional TKM-PLK1 **Phase I data** at 6th Annual North American Neuroendocrine Tumor Society (NA-NETS) Conference held in Charleston, South Carolina.

As a reminder, on December 22, 2010, Tekmira initiated a **Phase I clinical trial** of TKM-PLK1. The Phase I clinical trial, conducted at medical centers in the United States, is an open label, multi-dose, dose escalation study designed to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1 as well as determining the maximum tolerated dose. Secondary objectives of the trial are to measure tumor response and the pharmacodynamic effects of TKM-PLK1 in patients providing biopsies.

Tekmira has enrolled **a total of 36 patients** in a population of advanced cancer patients with solid tumors. Doses ranged from 0.15 mg/kg to 0.90 mg/kg during the dose escalation portion of the trial, with the maximum tolerated dose (MTD) of 0.75 mg/kg administered to the expansion cohort. A total of 174 doses were administered with a mean number of 5.3 doses per patient (range of 1-31 doses). No dose dependent changes in liver function tests were observed.

Tekmira already presented the preliminary results of its **Phase I** clinical trial with **TKM-PLK1** at the annual meeting of the American Association for Cancer Research **(AACR)** in an oral presentation on April 9, 2013.

The new data presented at the NA-NETS showed that forty percent (6 out of 15) of patients evaluable for response, treated at a dose equal to or greater than 0.6 mg/kg, showed clinical benefit. Of the 36 patients enrolled, three out of the four Adrenocortical Carcinoma **ACC** patients (75%) treated with TKM-PLK1 achieved stable disease, including one patient who saw a 19.3% reduction in tumor size and is still on study receiving TKM-PLK1. Of the two Gastrointestinal Neuroendocrine Tumors GI-NET patients enrolled, both experienced clinical benefit: one patient had a partial response based on RECIST criteria, and the other GI-NET patient achieved stable disease and showed a greater than 50% reduction in Chromogranin-A (CgA) levels, a key biomarker used to predict clinical outcome and tumor response.



TKM-PLK1 Clinical Benefit

6 of 15 (40%) evaluable subjects treated at ≥ 0.60 mg/kg had clinical benefit

Subject	Dose	Tumor Type	# Prior Regimens	Best Response	Duration on Study
003-13	0.60	Colon*	3	SD	6 mo.
003-20	0.90/0.60	NET*	1	PR	11 mo.
003-24	0.75	NET	1	SD	4 mo.
002-25	0.75	ACC*	3	SD	6 mo.
002-35	0.75/0.60	ACC*	2	SD	1.75 mo.
002-39	0.75	ACC*	2	SD**	4 mo.(ongoing)

*Subject had progressive disease prior to study. **Subject showed tumor size reduction of 19.3% after Cycle 2

New TKM-PLK1 Phase I/II Clinical Trial is Underway

Based on the above Phase I data, on Aug. 12, 2013, Tekmira initiated a new **Phase I/II** clinical trial with TKM-PLK1.

The new Phase I/II trial will enroll patients with either advanced Gastrointestinal Neuroendocrine Tumors (**GI-NET**) or Adrenocortical Carcinoma (**ACC)**. By focusing on these indications, where drug activity in the previous Phase I trial was observed, Tekmira aims to collect additional data on the efficacy of TKM-PLK1 to guide future development and regulatory strategy for this promising agent.

Results from this trial are expected to be available by mid-2014. If supported by the data, Tekmira will commence a **pivotal trial** in GI-NET by the end of 2014. In addition, the company anticipates initiating a separate Phase I/II clinical trial with TKM-PLK1, which will enroll patients with Hepatocellular Carcinoma (**HCC**) in the first half of 2014.

The GI-NET and ACC Phase I/II clinical trial will be a multi-center, single arm, open label study designed to measure efficacy using RECIST and tumor biomarkers for GI-NET patients, as well as to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1. TKM-PLK1 will be administered weekly with each four-week cycle consisting of three once-weekly doses followed by a rest week. It is expected that approximately 20 patients with advanced GI-NET or ACC tumors will be enrolled in this trial, with a minimum of 10 GI-NET patients to be enrolled.

Tekmira will also initiate another **Phase I/II** clinical trial with TKM-PLK1, enrolling patients with Hepatocellular Carcinoma (**HCC)** in the first half of 2014. This clinical trial will be a multi-center, open

label, non-randomized, dose escalation study designed to evaluate the safety, tolerability and pharmacokinetics of TKM-PLK1 as well as determine the maximum tolerated dose in HCC patients and measure the anti-tumor activity of TKM-PLK1 in HCC patients.

Neuroendocrine tumors (NETs) arise from a variety of anatomic sites and share the capacity for production of hormones and vasoactive peptides. Because of their perceived rarity, NETs have not historically been a focus of rigorous clinical research. However, the diagnosed incidence of NETs has been increasing, and the estimated prevalence in the United States exceeds 100,000 individuals. According to the Carcinoid Cancer Foundation, it is estimated that more than 12,000 new cases of carcinoid/NETs are diagnosed each year, and at least 115,000 people are living with carcinoid/NETs in the United States. Metastatic gastrointestinal carcinoid (neuroendocrine) tumors often have a poor prognosis and may have an aggressive clinical course.

Currently, treatment options for patients with neuroendocrine tumors are limited. Tekmira's TKM-PLK1 has the potential to become a standard of care for NET patients if successful.

Tekmira is on Track to Advance TKM-Ebola Program

On May 8, 2013, Tekmira announced that its contract with the U.S. Department of Defense (DoD) has been modified to support development plans that integrate advancements in Tekmira's lipid nanoparticle (LNP) formulation and manufacturing technologies, and provide for additional funding for the TKM-Ebola program.

Ebola is a virus, which, for many years, has been associated with periodic outbreaks of **hemorrhagic fever** in human populations with mortality rates reaching 90%. Currently there are no approved treatments for Ebola or other hemorrhagic fever viruses.

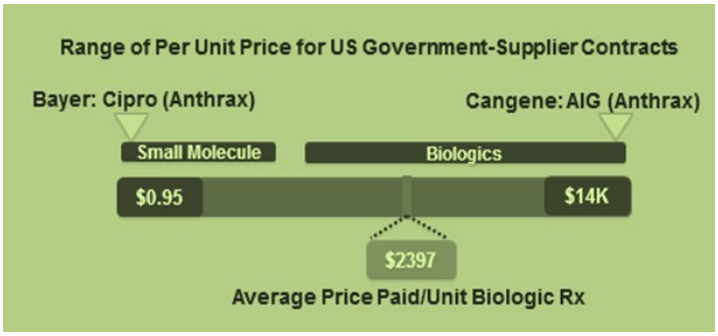
TKM-Ebola is an anti-Ebola viral therapeutic, being developed under a contract with the U.S. DoD's Joint Project Manager Transformational Medical Technologies (JPM-TMT) Office with a total contract value of approximately $140 million.

Under the **modification to the existing contract**, funding has been increased by $6.9 million, from $34.8 million to $41.7 million for the first phase of the contract.

Tekmira has initiated **pre-clinical** and chemistry, manufacturing and control studies that support the use of these improvements in the program. This development strategy will be accommodated by modifications to the existing contract, allowing both Tekmira and TMT to benefit from the significant advancements in LNP formulation technology made by Tekmira since the commencement of the TMT-funded program in July 2010. **Phase I** clinical trial is expected to be initiated in the first quarter of 2014 with data available in the second half of 2014.

TKM-Ebola is being developed under specific FDA regulatory guidelines called the "**Animal Rule**." The Animal Rule provides that under certain circumstances, where it is unethical or not feasible to conduct human efficacy studies, the FDA may grant marketing approval based on adequate and well-controlled animal studies when the results of those studies establish that the drug is reasonably likely to produce clinical benefit in humans. Demonstration of the product's safety in humans is still required.

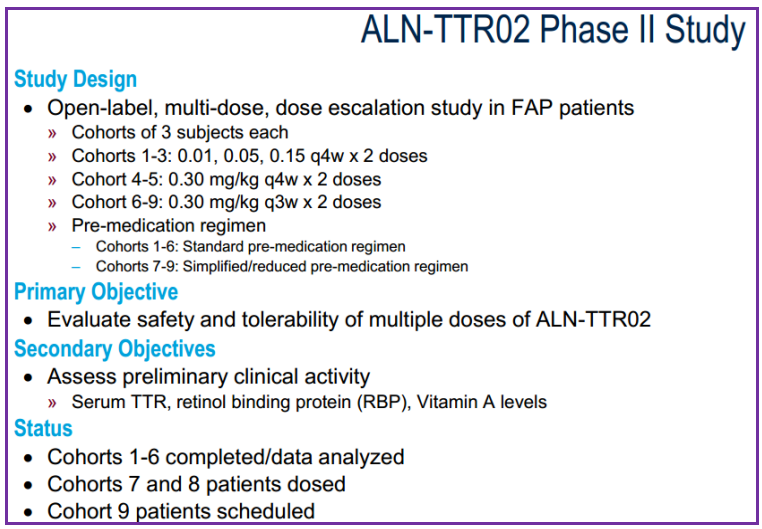
We think the "Animal Rule" means a lot for Tekmira, because this can accelerate the development of TKM-Ebola. Once approved by the FDA, Tekmira will have the opportunity to negotiate a stock-pile contract with the US government. These stock-pile or procurement contracts have been very lucrative for other companies supplying similar drugs to the US government.



Tekmira's LNP Technology Enables Alnylam's Positive Phase II ALN-TTR02 Data

On June 30, 2013, Alnylam Pharmaceuticals (ALNY) announced positive clinical results from its Phase II trial of ALN-TTR02, an RNAi therapeutic targeting the transthyretin (TTR) gene for the treatment of TTR-mediated amyloidosis (ATTR). The data were presented at the 2013 Biennial Meeting of the Peripheral Nerve Society, held June 29 – July 3 in St. Malo, France.

The Phase II trial with ALN-TTR02 is an open-label, multi-center, multi-dose, dose-escalation trial to evaluate the safety and tolerability of two doses of ALN-TTR02 and to demonstrate clinical activity based on serial measurement of circulating serum levels of wild-type and mutant TTR. The study was designed to treat up to 30 ATTR polyneuropathy patients with ALN-TTR02 administered at doses of 0.01 to 0.30 mg/kg, using either a **once-every-four-week** or **once-every-three-week** dosing regimen. To date, 25 patients in eight cohorts have been dosed in the study, and all patients for the final cohort have been scheduled for dosing. The international study is being conducted at 10 sites in Portugal, France, Sweden, Germany, Spain, Brazil, and the U.S.



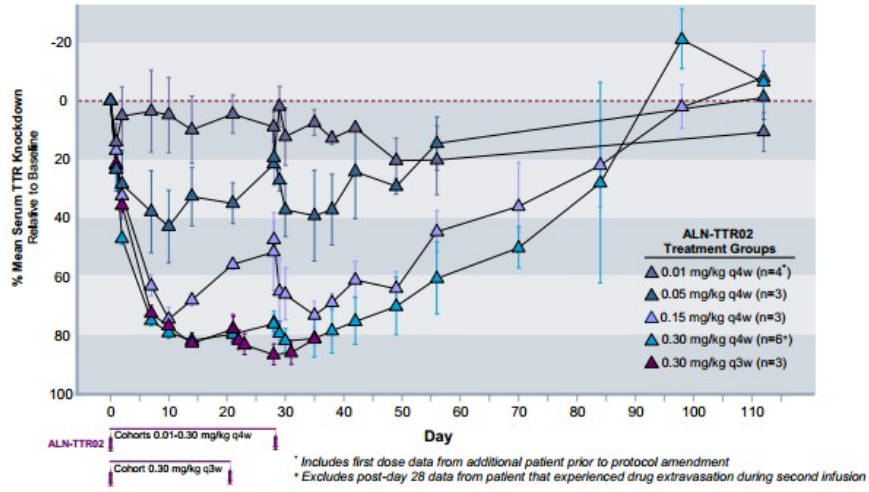
Data from the first 19 patients enrolled and analyzed in this study showed that multiple doses of ALN-TTR02 resulted in rapid, dose-dependent, and durable knockdown of serum TTR levels. As compared with the lowest dose group of 0.01 mg/kg, there was a statistically significant knockdown of serum TTR at doses of 0.15 mg/kg ($p<0.01$) and 0.30 mg/kg ($p<0.001$). At 0.30 mg/kg administered once every four weeks, mean TTR knockdown at nadir of 82.6% and 84.8% was observed following the first and second doses, respectively, and maximum TTR knockdown was up to 90.8%. At 0.30 mg/kg administered once every three weeks, mean TTR knockdown at nadir of 83.1% and 87.4% was observed following the first and second doses, respectively, and maximum TTR knockdown was up to 92.8%.

Summary of Serum TTR Knockdown by Dose Group

Dose Group (mg/kg)	Dose 1		Dose 2	
	Maximum TTR KD (%)	TTR KD @ Nadir (Mean % ±SD)	Maximum TTR KD (%)	TTR KD @ Nadir (Mean % ±SD)
0.01 q4w (n=4⁺)	37.8	20.1 ± 13.2	34.4	32.9 ± 2.3
0.05 q4w (n=3)	58.0	48.4 ± 16.2	58.5	46.9 ± 15
0.15 q4w (n=3)	81.7	74.5 ± 6.8***	86.0	77 ± 7.8**
0.30 q4w (n=6^)	87.5	82.6 ± 5.9***	90.8	84.8 ± 10.5***
0.30 q3w (n=3)	83.8	83.1 ± 1.1***	92.8	87.4 ± 5.9***

⁺ Includes first dose data from additional patient prior to protocol amendment
^ Excludes post-day 28 data from patient that experienced drug extravasation during second infusion
**p < 0.01 vs. 0.01 mg/kg group; p values from ANCOVA models including baseline TTR as covariate and dose group as factor
*** p < 0.001 *vs.* 0.01 mg/kg group

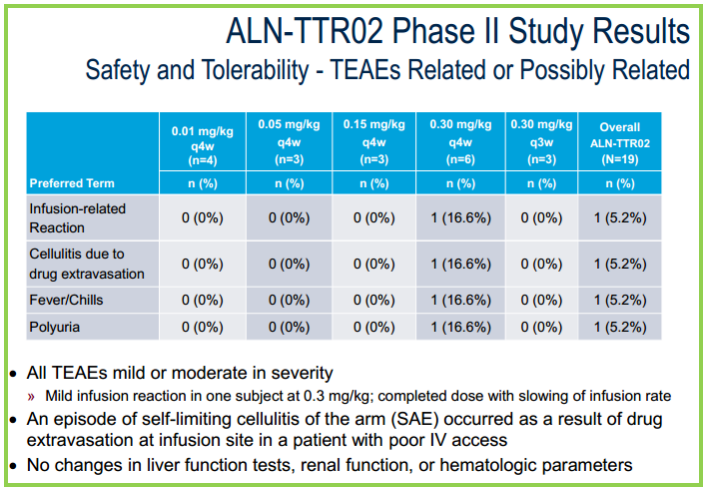
Dose Response and Duration of TTR Knockdown



A number of additional analyses were performed in this first-ever study of ALN-TTR02 in ATTR patients. First, a proprietary mass spectrometry method was used to measure serum levels of wild-type and mutant V30M proteins. These results demonstrated an essentially 1:1 knockdown of mutant and wild-type TTR (r^2=0.95, p<0.001) with superimposable pharmacodynamic effects toward both protein species. Furthermore, a similar degree of TTR knockdown was observed in patients on concurrent TTR stabilizer therapy (specifically, tafamidis or diflunisal) compared to those who received ALN-TTR02 alone. These results demonstrate the absence of any interference by TTR stabilizer drugs with the pharmacologic activity of ALN-TTR02. Finally, serum TTR reductions were highly correlated with parallel changes in retinol binding protein (RBP) (r^2=0.85, p<0.001) and vitamin A levels (r^2=0.84, p<0.001).

Multiple doses of ALN-TTR02 were found to be generally safe and well tolerated. There were no significant adverse events or discontinuations associated with drug up through 0.30 mg/kg. There were no abnormalities in liver function tests, renal function, or hematologic parameters. Adverse events included a mild infusion-related reaction that occurred in one patient who was able to complete dosing with slowing of the infusion rate. An episode of self-limiting cellulitis of the arm, a serious adverse event,

occurred as a result of drug extravasation at the infusion site in a patient with poor intravenous access. In the ongoing dosing in patients at 0.30 mg/kg once every three weeks using a reduced and simplified pre-medication regimen, there have been no reports to date of any infusion-related reactions. The new pre-medication regimen includes a reduced steroid dose administered prior to ALN-TTR02 infusion.



ALN-TTR02 Phase II Study Results

Safety and Tolerability - TEAEs Related or Possibly Related

Preferred Term	0.01 mg/kg q4w (n=4) n (%)	0.05 mg/kg q4w (n=3) n (%)	0.15 mg/kg q4w (n=3) n (%)	0.30 mg/kg q4w (n=6) n (%)	0.30 mg/kg q3w (n=3) n (%)	Overall ALN-TTR02 (N=19) n (%)
Infusion-related Reaction	0 (0%)	0 (0%)	0 (0%)	1 (16.6%)	0 (0%)	1 (5.2%)
Cellulitis due to drug extravasation	0 (0%)	0 (0%)	0 (0%)	1 (16.6%)	0 (0%)	1 (5.2%)
Fever/Chills	0 (0%)	0 (0%)	0 (0%)	1 (16.6%)	0 (0%)	1 (5.2%)
Polyuria	0 (0%)	0 (0%)	0 (0%)	1 (16.6%)	0 (0%)	1 (5.2%)

- All TEAEs mild or moderate in severity
  - » Mild infusion reaction in one subject at 0.3 mg/kg; completed dose with slowing of infusion rate
- An episode of self-limiting cellulitis of the arm (SAE) occurred as a result of drug extravasation at infusion site in a patient with poor IV access
- No changes in liver function tests, renal function, or hematologic parameters

Alnylam intends to present the final data from this ALN-TTR02 Phase II study at the IXth International Symposium on Familial Amyloidotic Polyneuropathy (ISFAP) to be held in Rio de Janeiro, Brazil, November 10 – 13, 2013. In addition, the company remains on track to initiate in mid-2013 an open-label extension (OLE) study of ALN-TTR02 for patients treated in the Phase II study. The ALN-TTR02 OLE study will include a number of clinical endpoint measurements, such as neuropathy impairment score, or "NIS," with initial data expected to be presented in 2014.

In addition, the company intends to start a **Phase III pivotal trial** for ALN-TTR02 in familial amyloidotic polyneuropathy (FAP) patients **by the end of 2013.**

What Is The Impact On Tekmira?

Positive data from the Phase II trial of ALN-TTR02 will have a huge impact on Tekmira.

Some investors may be focused on the $5 million milestone payment Tekmira will receive when ALN-TTR02 enters a pivotal Phase III clinical trial, which should occur by the end of 2013 and the royalty payments based on commercial sales of ALN-TTR02. Both are important for Tekmira because milestone and royalty payments boost Tekmira's balance sheet in a non-dilutive way. However, the most important thing for Tekmira from the ALN-TTR02 Phase II data is that ALN-TTR02 is the most advanced RNAi therapeutic candidate and that positive data from the Phase II trial further validate Tekmira's LNP platform technology. Also, Positive data from the Phase II trial will further strength Tekmira's leadership in the field of RNAi therapeutics.

Tekmira Exited Second Quarter 2013 With Strong Balance Sheet

On Aug. 12, 2013, Tekmira Pharmaceuticals Corporation (TKMR) announced its financial and operating results for the second quarter ended June 30, 2013 and provided a corporate update.

Revenue was $2.9 million for second quarter of 2013 as compared to $3.6 million for the second quarter of 2012.

Under a DoD contract to develop TKM-Ebola, Tekmira is being reimbursed for costs incurred, including an allocation of overheads, and is being paid an incentive fee. For this contract, Tekmira recorded $2.5 million in revenue in the second quarter of 2013 and $2.5 million in second quarter of 2012.

In the second quarter of 2012, Tekmira earned a $1.0 million milestone from Alnylam following initiation of their ALN-TTR02 Phase II human clinical trial. ALN-TTR02 is enabled by Tekmira's LNP delivery technology.

Research, development, collaborations and contracts expenses were $5.1 million in the second quarter of 2013 as compared to $3.6 million in the second quarter of 2012.

TKM-PLK1 clinical trial expenses have increased in the second quarter of 2013, as compared to the second quarter of 2012, as patient enrolment has accelerated. R&D salary expense has also increased as Tekmira has hired staff in a number of areas supporting development of Tekmira's product candidates.

General and administrative expenses were $0.9 million in the second quarter of 2013 as compared to $2.4 million in the second quarter of 2012. Second quarter of 2012 general and administrative expenses were higher as they included legal fees incurred in respect of a lawsuit against Alnylam Pharmaceuticals, Inc. and AlCana Technologies, Inc. that was settled in November 2012.

Net loss for the second quarter was $3.1 million ($0.22 per common share) as compared to a net loss of $1.9 million ($0.14 per common share) for the second quarter of 2012.

Tekmira exited second quarter of 2013 with a strong balance sheet. As of June 30, 2013, the Company had cash and cash equivalents of $41 million. Tekmira expects to have an aggregate balance of cash and cash equivalents and short-term investments to be in the range of $30.0 to $35.0 million at the end of 2013. According to our long term model, current funds on hand, plus expected income, including payments from current licensees, collaborative partners and the DoD will be sufficient to last until mid-2015.

Why We Think Tekmira Shares Are Undervalued

Although there has been a huge run in the past few days, we still think that Tekmira shares are undervalued at its current market price. **We raise our price target to $18** per share based on the company's strong fundamentals and recent progress the company has made. We have multiple reasons for our argument.

Tekmira is one of the pioneers and leaders in the field of RNAi therapeutics. We are optimistic about the Company's **LNP delivery platform technology**, which has proven to have the power to systemically deliver RNA drug candidates to a variety of organs and cells throughout the body.

Based on the LNP platform, Tekmira has built a diversified pipeline, which targets cancer and other indications. Its internal lead drug candidate TKM-PLK1 for cancers is in a Phase I/II clinical trial and preliminary data has shown promising efficacy and favorable safety profile. A pivotal study will be initiated by the end of 2014.

Tekmira has also established a strong partnership with the US government and biotech/pharmaceutical companies to utilize its LNP technology to advance RNAi therapeutics. These partnerships not only provide non-dilutive financing, but also validate the technology and diversify the Company's risk. The government sponsored TKM-Ebola program is being developed under specific FDA "**Animal Rule**", which means that the development for TKM-Ebola could be accelerated since no human clinical trial for efficacy is required.

The company also entered into new areas such as HBV and Marburg virus.

Our call also considers the Company's strong balance sheet. The settlement with Alnylam provided a $65 million up-front payment to Tekmira in 2012 and another $10 million milestone payment is anticipated for 2013. Tekmira's cash balance should last into mid-2015 according to our long term financial model. This is compelling for a small cap biotech company. The Company will also receive royalty payments from

Marqibo sales which we expect will start in 2013 (Spectrum Pharma launched Marqibo in September, 2013). Further, Tekmira will continue to monetize its LNP platform technology and receive license fees and milestone payments from its partners. With the Alnylam settlement completed, Tekmira is well positioned to execute its long term growth strategy.

Based on our analysis, we think Tekmira shares are still undervalued at this time. Currently, shares of Tekmira are trading at around $10.0 per share, which values the Company at $129 million in market cap. Most small biotech companies of development stage are valued from $50 million to $500 million depending on how advanced the pipeline is and which indications the company is targeting. Tekmira's TKM-PLK1 for cancer is in Phase I/II clinical studies, and the Company's TKM-Ebola product is being developed under the accelerated FDA "Animal Rule". TKM-PLK1 has the potential for the treatment of multiple cancers providing a large market opportunity. In the next year or so, Tekmira will advance additional programs into the clinic. TKM-HBV targets a big HBV market.

We think at this time Tekmira should be valued between $300 and $400 million in market cap. If we look at the below table of RNA based biotech companies, we think Tekmira should be worth more than Regulus. Our price target of $18 values Tekmira at $252 million in market cap which we think is conservative.

Name	Ticker	Share Price	Market Cap ($million)	Phase I	Phase II	Phase III	Marketed Products
Isis	ISIS	$31.37	$3,620.00	5	15	2	1
Alnylam	ALNY	$57.00	$3,590.00	4	3	0	0
Regulus	RGLS	$9.28	$336.00	0	0	0	0
Arrowhead	ARWR	$6.82	$215.00	2	1	0	0
Sarepta	SRPT	$50.05	$1,680.00	3	1	0	0
RXi	RXII	$3.39	$40.00	1	0	0	0
Bio-Path	BPTH	$1.75	$132.00	1	0	0	0
Tekmira	**TKMR**	**$10.80**	**$129.00**	**3**	**2**	**0**	**0**
Average		**$21.31**	**$1,217.75**				

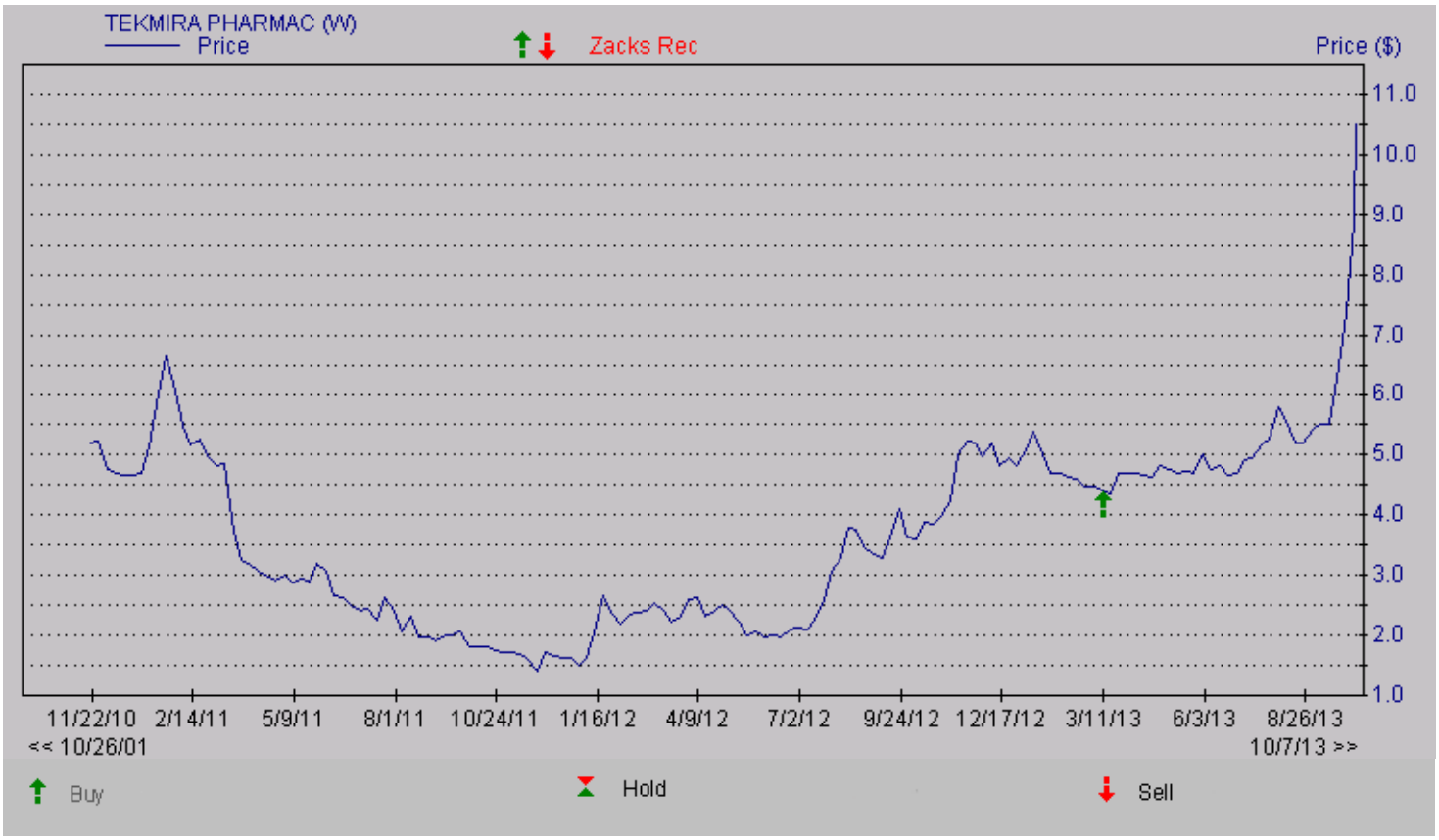
PROJECTED INCOME STATEMENT

	2011	2012					2013					2014	2015	2016
Cdn$ in millions except per share data	FY	Q1	Q2	Q3	Q4	FY	Q1	Q2	Q3	Q4	FYE	FYE	FYE	FYE
Collaborations and Contracts	$16.1	$3.6	$2.6	$2.1	$3.9	$12.1	$2.2	$2.9	$2.5	$2.5	$10.1	$12.5	$14.0	$16.0
YOY Growth	*8.0%*	*-17.9%*	*-41.0%*	*-43.5%*	*3.8%*	*-25.0%*	*-38.4%*	*12.6%*	*21.6%*	*-35.5%*	*-16.3%*	*23.5%*	*12.0%*	*14.3%*
License/Milestone/Royalty	$0.5	$0.0	$1.0	$1.0	$0.0	$2.0	$0.0	$0.0	$5.0	$5.0	$10.0	$5.0	$5.0	$5.0
YOY Growth	*-91.9%*	-	-	*89.3%*	-	*283.5%*	-	*-100.0%*	*404.0%*	*#DIV/0!*	*397.5%*	*-50.0%*	*0.0%*	*0.0%*
Product Sales													$5.0	$10.0
YOY Growth														*100.0%*
Total Revenues	**$16.6**	**$3.6**	**$3.6**	**$3.0**	**$3.9**	**$14.1**	**$2.2**	**$2.9**	**$7.5**	**$7.5**	**$20.1**	**$17.5**	**$24.0**	**$31.0**
YOY Growth	*-22.0%*	*-17.9%*	*-17.9%*	*-26.7%*	*3.8%*	*-15.3%*	*-38.4%*	*-19.1%*	*146.1%*	*93.5%*	*42.6%*	*-13.0%*	*37.1%*	*29.2%*
CoGS	$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
Gross Income	**$16.6**	**$3.6**	**$3.6**	**$3.0**	**$3.9**	**$14.1**	**$2.2**	**$2.9**	**$7.5**	**$7.5**	**$20.1**	**$17.5**	**$24.0**	**$31.0**
Gross Margin	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
R&D	$19.9	$4.1	$3.6	$3.1	$7.2	$18.0	$4.2	$5.1	$7.0	$8.5	$24.7	$27.5	$30.0	$32.5
% R&D	*119.5%*	*116.1%*	*98.7%*	*101.8%*	*186.3%*	*127.8%*	*190.8%*	*172.8%*	*93.3%*	*113.3%*	*123.0%*	*157.1%*	*125.0%*	*104.8%*
SG&A	$6.3	$1.8	$2.4	$1.5	$2.4	$8.1	$0.9	$0.9	$1.0	$1.0	$3.8	$4.6	$5.5	$6.6
% SG&A	*37.9%*	*51.1%*	*66.4%*	*49.4%*	*62.1%*	*57.7%*	*41.9%*	*29.8%*	*13.3%*	*13.3%*	*18.8%*	*26.0%*	*22.8%*	*21.1%*
Depreciation & Others	$1.0	$0.2	$0.2	$0.2	$0.2	$0.9	$0.2	$0.2	$0.1	$0.1	$0.6	$0.5	$0.4	$0.2
% Other	*5.9%*	*6.8%*	*6.2%*	*7.0%*	*4.7%*	*6.1%*	*7.8%*	*5.4%*	*1.9%*	*1.9%*	*3.0%*	*2.9%*	*1.7%*	*0.6%*
Operating Income	**($10.5)**	**($2.6)**	**($2.6)**	**($1.8)**	**($5.9)**	**($12.9)**	**($3.1)**	**($3.2)**	**($0.6)**	**($2.1)**	**($9.0)**	**($15.1)**	**($11.9)**	**($8.3)**
Operating Margin	-	-	-	-	-	-	-	-	*-8.5%*	*-28.5%*	-	-	-	-
Other Income (Net)	$0.6	($0.5)	$0.7	($1.7)	$44.2	$42.7	$0.5	$0.1	$0.2	$0.2	$0.9	$0.8	$0.8	$0.5
Pre-Tax Income	**($9.9)**	**($3.2)**	**($1.9)**	**($3.4)**	**$38.3**	**$29.8**	**($2.6)**	**($3.1)**	**($0.4)**	**($1.9)**	**($8.1)**	**($14.3)**	**($11.1)**	**($7.8)**
Net Taxes (benefit)	$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
Tax Rate	*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%*
Reported Net Income	**($9.9)**	**($3.2)**	**($1.9)**	**($3.4)**	**$38.3**	**$29.8**	**($2.6)**	**($3.1)**	**($0.4)**	**($1.9)**	**($8.1)**	**($14.3)**	**($11.1)**	**($7.8)**
YOY Growth	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Margin	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Weighted avg. Shares Out	*11.3*	*12.8*	*14.0*	*14.0*	*16.5*	*14.3*	*14.3*	*14.4*	*15.0*	*15.5*	*14.8*	*15.5*	*17.5*	*20.0*
Reported EPS	**($0.88)**	**($0.25)**	**($0.14)**	**($0.25)**	**$2.32**	**$2.08**	**($0.18)**	**($0.22)**	**($0.03)**	**($0.13)**	**($0.55)**	**($0.92)**	**($0.63)**	**($0.39)**
YOY Growth	-	-	-	-	-	-	-	-	-	-	-	-	-	-
One time charge	($0.5)	$0.55	($0.6)	$1.74	($44.3)	($42.6)	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Non GAAP Net Income	**($10.4)**	**($2.6)**	**($2.6)**	**($1.7)**	**($5.9)**	**($12.8)**	**($2.6)**	**($3.1)**	**($0.4)**	**($1.9)**	**($8.1)**	**($14.3)**	**($11.1)**	**($7.8)**
Non GAAP EPS	**($0.92)**	**($0.20)**	**($0.18)**	**($0.12)**	**($0.36)**	**($0.89)**	**($0.18)**	**($0.22)**	**($0.03)**	**($0.13)**	**($0.55)**	**($0.92)**	**($0.63)**	**($0.39)**

Source: Company filings and Zacks estimates

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