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IGNYTA, INC.

Backfills Pipeline with Cdc7 and RET Agreements; Still on the Hunt for More

RXDX (NASDAQ)

Company & Market Data	
Closing Price (as of August 4, 2014):	$7.98
Rating:	BUY
Price Target:	$20.00
52 Week Range:	$1.00 - $20.00
Shares Outstanding (MM):	20
Market Capitalization (MM):	$156
Cash (MM):	$100.4
Debt (MM):	$9.0
Fiscal Year End:	Dec

Estimates			
EPS	**2013A**	**2014E**	**2015E**
1Q	—	$(0.28)A	$(0.31)
2Q	—	$(0.24)	$(0.33)
3Q	—	$(0.27)	$(0.34)
4Q	—	$(0.27)	$(0.34)
Full Year	$(1.94)	$(1.06)	$(1.33)
Revenue (MM)	$0.0	$0.0	$0.0

Ignyta is developing personalized oncology drugs using diagnostic tests to identify patients most likely to respond to therapy. The company's lead product RXDX-101, is a TrkA/B/C, ROS1, ALK inhibitor in Phase I development for the treatment of solid tumors. Ignyta hopes to move the program into Phase II development in 2015 for multiple indications including NSCLC. The San Diego-based company is also in pre-clinical development of other targeted cancer therapies based on proprietary Oncolome molecular expression database.

On 8/4/14, RXDX announced an important strategic transaction with Nerviano Medical Services to fill the gap between RXDX-101 (entering Phase IIa) and the company's in-house SPARK programs (lead may enter clinic in 2017). The transaction includes two preclinical targeted drug candidates focused on validated oncology targets. The more advanced program, renamed RXDX-103, is a second generation inhibitor of cell division cycle 7 (Cdc7) that may enter the clinic in 1H16. The second program, RXDX-104, is in late stage candidate selection as a highly selective inhibitor of RET. Both Cdc7 and RET are well characterized targets that have presented development challenges for researchers. We believe Nerviano has established a leading position in Cdc7 research and encourage investors to focus on RXDX-103 as the primary driver of future value. Specifically, we believe Phase I data, which, in our view, may be available by the end of 2016, could be a significant catalyst for RXDX shares. Several companies have encountered setbacks in development of Cdc7 inhibitors related to permeability, toxicity associated with certain metabolites and to a lesser extent cross-reactivity. RXDX believes the 2nd generation compound address these challenges. While we believe future presentation of in vitro ADME and preclinical pharmacokinetic data may offer some insight into the metabolic profile of RXDX-103, we believe clinical data will be necessary to properly assess the drug's safety profile. For RXDX-104, we believe RET is an interesting target in a relatively crowded area of drug development. We view increased visibility on time-to-market as an important milestone in evaluating RXDX-104. Reiterate Buy rating and $20.00 PT.

- **What's New?** RXDX licensed global rights to the Cdc7 inhibitor RXDX-103 and RET inhibitor RXDX-104 from Nerviano. Terms call for RXDX to pay $3.5M upfront, up to $68M in development milestones for RXDX-103, up to $34M in milestones on RXDX-104 and mid-single to low double digit royalties. RXDX will assume responsibility for RXDX-103 development expenses and for expenses related to RXDX-104 upon the earlier of 12/31/14 or the identification of a lead development candidate. This is RXDX's second license agreement with Nerviano.
- **RXDX-103 - Improved 2nd Generation Cdc7 Inhibitor.** Cdc7 is a serine threonine kinase involved in initiation of DNA replication. Cdc7 activity is regulated by p53 in normal cells but is dysregulated in many solid tumors including breast cancer, colorectal cancer and ovarian cancer. Nerviano has completed three Phase I studies in an aggregate of 48 solid tumor and hematologic patients of a first generation compound, NMS-354. Development of NMS-354 was stopped due to low drug exposure related to rapid metabolism and generation of a toxic metabolite at higher than expected levels. Nerviano engineered RXDX-103 with an improved metabolic profile, which should provide greater flexibility in dosing at adequate drug levels. Phase I studies are targeted for 1H16. Composition of matter expires in 2027.
- **RXDX-104 - Selective RET Inhibitor in Crowded Field.** The opportunity and challenges for RXDX-104 are more straightforward than RXDX-103, in our view. Several pan kinase inhibitors regulate RET activity including vandetanib from AstraZenaca (AZN, $73.69, Not Rated), cabozantinib from Exelixes (EXEL, $4.11, Not Rated) and sunitinib from Pfizer (PFE, $28.75, Not Rated). However, these drugs do not preferentially target RET resulting in significant off-target toxicity. While we believe there is a clear clinical need for selective RET inhibition, several companies are developing compounds and, in our view, time-to-market will be an important commercial consideration. Composition of matter expires in 2033.

Table 1.

Ignyta Income Statement												
(in $ millions)	**2013A**		**1Q14A**	**2Q14E**	**3Q14E**	**4Q14E**	**2014E**		**1Q15E**	**2Q15E**	**3Q15E**	**4Q15E**	**2015E**
Total product revenue	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Other Revenue	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Revenue	$0.0		$0.0	$0.0	$0.0	$0.0	$0.0		$0.0	$0.0	$0.0	$0.0	$0.0
COGS	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Gross profit	$0.0		$0.0	$0.0	$0.0	$0.0	$0.0		$0.0	$0.0	$0.0	$0.0	$0.0
G&A	3.7		1.8	1.5	1.5	1.4	6.1		1.6	1.8	1.7	1.7	6.8
Research & development	3.2		2.2	3.3	4.0	4.0	13.5		4.7	4.9	5.2	5.2	20.0
Operating profit (loss)	($6.9)		(3.9)	(4.8)	(5.5)	(5.4)	($19.6)		(6.3)	(6.7)	(6.9)	(6.9)	($26.8)
Interest income	0.0		0.0	0.1	0.1	0.1	0.2		0.1	0.1	0.1	0.0	0.2
Interest expense	(0.2)		(0.1)	(0.2)	(0.2)	(0.2)	(0.7)		(0.2)	(0.2)	(0.2)	(0.2)	(0.7)
Other	(0.1)		(0.0)	0.0	0.0	0.0	(0.0)		0.0	0.0	0.0	0.0	0.0
Taxes	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Net profit (loss)	(7.2)		(4.1)	(4.9)	(5.6)	(5.5)	(20.1)		(6.4)	(6.8)	(7.1)	(7.0)	(27.3)
Earnings (loss) per share from continuing ops	($1.94)		($0.28)	($0.24)	($0.27)	($0.27)	($1.06)		($0.31)	($0.33)	($0.34)	($0.34)	($1.33)
One-time gains (expenses)	($0.54)		$0.00	$0.00	$0.00	$0.00	$0.00		$0.00	$0.00	$0.00	$0.00	$0.00
Net income (loss) as reported	(14.2)		(4.1)	(4.9)	(5.6)	(5.5)	(20.1)		(6.4)	(6.8)	(7.1)	(7.0)	(27.3)
Earnings (loss) per share as reported	($3.83)		($0.28)	($0.24)	($0.27)	($0.27)	($1.06)		($0.31)	($0.33)	($0.34)	($0.34)	($1.33)
Weighted average common shares	3.7		14.5	20.5	20.5	20.5	19.0		20.5	20.5	20.5	20.5	20.5

Source: Company reports and Ladenburg Thalmann estimates

Company and Industry-Specific Risks

We think the primary risks of an investment in RXDX shares include, but are not limited to:

Clinical: While efficacy and safety of other ALK inhibitors for NSCLC has been well characterized in both clinical trials and commercial experience, there can be no assurance RXDX-101 will demonstrate clinically meaningful activity in NSCLC and other solid tumors. Additionally, RXDX-101 also inhibits ROS1 and TrkA/B/C. While there is a theoretical connection between inhibition of these tyrosine kinases and anti-tumor activity for a range of solid tumors including NSCLC, colon and glioblastoma, among others, there can be no assurances that future studies can be designed to evaluate the potential efficacy of co-inhibition of these tyrosine kinases or will confirm a positive impact on disease progression or survival, if a study is conducted. In the absence of clinical outcomes data, there can be no assurance that clinicians will accept or recognize the benefit of RXDX-101 over existing ALK inhibitors such as crizotinib. Additionally, the company is developing additional targeted cancer therapies based on its proprietary Oncolome database and acquired drug candidates including RXDX-103 and RXDX-104. There can be no assurance any future studies of pipeline programs will be adequate to support regulatory approval, reimbursement or commercial acceptance of pipeline programs. Lastly, RXDX relies on a virtual clinical development business model based on a small in-house management group and third party contractors. Loss of one or more executives could have an adverse impact of future clinical trials management.

Regulatory: RXDX is subject to oversight by multiple groups at the U.S. FDA including the Oncologic Drugs Advisory Committee for oncology drug development and Office of In Vitro Diagnostic Device Evaluation and Safety for companion diagnostics. There can be no assurance registration studies will be adequate to support regulatory filing with ODAC for RXDX-101 or any other pipeline product. Additionally, we expect the companion to diagnostic for RXDX-101 and other pipeline programs to be commercialized through diagnostic partners. There can be no assurance RXDX or its diagnostic partners will win timely PMA clearance for companion to RXDX-101 or any other pipeline product.

Competition: We are not aware of any other company developing a pan-inhibitor of ALK, ROS1 and TrkA/B/C. Additionally, there are currently no ROS1 or TrkA/B/C inhibitors approved for treatment of solid tumors in the U.S. or Europe. However, several companies have disclosed plans to develop therapies targeting TrkA/B/C. We believe RXDX-101 is currently the most advanced TrkA/B/C program in clinical development. There can be no assurance RXDX will be successful in maintaining its current leadership for timely commercialization of a TrkA/B/C inhibitor. Finally, several companies are developing second-generation ALK inhibitors with better blood-brain barrier than crizotinib. Some of these programs are more advanced than RGDX-101.

Financing: The company believes its financial resources will fund operations into at least 2017. However, depending on the pace of business development, RXDX may need additional capital to fund operations through Phase II proof-of-concept studies of RXDX-101. If Phase II studies are successful, RXDX may need access to additional capital through either internal sources or partnerships to fund registration studies and to fund commercialization. There can be no assurance RXDX will have access to capital in the future on adequate terms, or at all.

Partnership: RXDX will rely on partnerships with CROs, diagnostic product companies and other service providers to support clinical development and U.S. regulatory filings for RXDX-101 and its other pipeline programs. Additionally, we expect the company to seek commercial partners for RXDX-101 and its other pipeline programs in geographies outside the United States including Europe and Asia. There can be no assurance the partners will be successful in maintaining a steady supply of drug product, provide adequate support for clinical trials enrollment, optimize appropriate companion diagnostics or offer appropriate commercialization support in Europe, Asia and other regions outside the U.S. Lastly, the company licensed rights to RXDX-101 and RXDX-102 from Nerviano Medical Sciences. While Nerviano is not responsible for conducting any future clinical development, the two companies have signed a service agreement for additional

manufacturing and clinical support services through 2014. There can be no assurance Nerviano will provide adequate support for timely future development of RXDX-101.

Product Liability: Pharmaceutical companies may face potential product liability lawsuits associated with adverse events – both currently identified and identified through future clinical trials and commercial experience. Product liability claims may result in limiting future product promotion, removal of one or more products from the market and potential for financial penalties and fines that may adversely impact RXDX's cash flow and financial position, including cash balance and ability to meet various debt covenants.

Limited Operating History: While the company was formed in 2012, RXDX had limited operations as a drug development company prior to May 2013. This limited operating history may restrict the scope of information available for investors to form an investment opinion. RXDX is classified as an emerging growth company and is entitles to more limited disclosure requirements, which may make shares of RXDX less attractive to investors. The company went public in November 2013 through a reverse merger and trading volume in shares of RXDX has limited due in part to the small number of registered shares. There can be no assurance that there will be a liquid and orderly market for trading of RXDX shares in the near term, or ever. Additionally, if one or more holders of common stock covered by an effective registration statement seeks to sell stock, the share price may be adversely impacted.

Debt Repayment: The company has a $10M debt facility with Silicon Valley Bank Corp. that matures in December 2017. There can be no assurance RXDX will have adequate funds to repay the loan facility or that alternative debt financing will be available on acceptable terms, if at all.

APPENDIX A: IMPORTANT RESEARCH DISCLOSURES

ANALYST CERTIFICATION

I, Kevin DeGeeter, attest that the views expressed in this research report accurately reflect my personal views about the subject security and issuer. Furthermore, no part of my compensation was, is, or will be directly or indirectly related to the specific recommendation or views expressed in this research report, provided, however, that:

The research analyst primarily responsible for the preparation of this research report has or will receive compensation based upon various factors, including the volume of trading at the firm in the subject security, as well as the firm's total revenues, a portion of which is generated by investment banking activities.

Additional information regarding the contents of this publication will be furnished upon request. Please contact Ladenburg Thalmann, Compliance Department, 570 Lexington Avenue, 11th floor, New York, New York 10022 (or call 212-409-2000) for any information regarding current disclosures, and where applicable, relevant price charts, in regard to companies that are the subject of this research report.

COMPANY BACKGROUND

Ignyta is developing personalized oncology drugs using diagnostic tests to identify patients most likely to respond to therapy. The company's lead product RXDX-101, is a TrkA/B/C, ROS1, ALK inhibitor in Phase I development for the treatment of solid tumors. Ignyta hopes to move the program into Phase II development in 2015 for multiple indications including NSCLC. The San Diego-based company is also in pre-clinical development of other targeted cancer therapies based on proprietary Oncolome molecular expression database.

VALUATION METHODOLOGY

Our $20.00 price target is based on a DCF analysis assuming 25% discount rate, 21.5 million shares on a fully diluted basis, terminal year (2022) FCF of $168M and 15% long-term growth rate.

RISKS

These risk factors (clinical, regulatory, competition, financing, partnership, product liability, limited operating history, and debt repayment) do not constitute all the potential risks of investing in the subject company's shares. Investors should refer to the company's SEC filings including the most recent forms 10-K and 10-Q for further details on the risks associated with an investment in the subject company's shares.

STOCK RATING DEFINITIONS

Buy: The stock's return is expected to exceed 12.5% over the next twelve months.

Neutral: The stock's return is expected to be plus or minus 12.5% over the next twelve months.

Sell: The stock's return is expected to be negative 12.5% or more over the next twelve months.

Investment Ratings are determined by the ranges described above at the time of initiation of coverage, a change in risk, or a change in target price. At other times, the expected returns may fall outside of these ranges because of price movement and/or volatility. Such interim deviations from specified ranges will be permitted but will become subject to review.

RATINGS DISPERSION AND BANKING RELATIONSHIPS AS OF (August 5, 2014)

Rating	%	IB %
BUY	75.0	57.3
NEUTRAL	25.0	42.0
SELL	0.0	0.0

COMPANIES UNDER KEVIN'S COVERAGE

ADMA Biologics, Inc. (ADMA)
BG Medicine, Inc. (BGMD)
diaDexus, Inc. (DDXS)
Genetic Technologies, Ltd. (GENE)
Mesoblast Ltd. (MBLTY)
Navidea Biopharmaceuticals Inc. (NAVB)
Opko Health, Inc. (OPK)
Ignyta, Inc. (RXDX)
Aeolus Pharmaceuticals Inc. (AOLS)
CombiMatrix Corporation (CBMX)
Exact Sciences Corp. (EXAS)
Genomic Health Inc. (GHDX)
Myriad Genetics Inc. (MYGN)
Novavax, Inc. (NVAX)
Parnell Pharmaceuticals Holdings LTD (PARN)
Sequenom Inc. (SQNM)

COMPANY SPECIFIC DISCLOSURES

Ladenburg Thalmann & Co. Inc. makes a market in Ignyta, Inc..

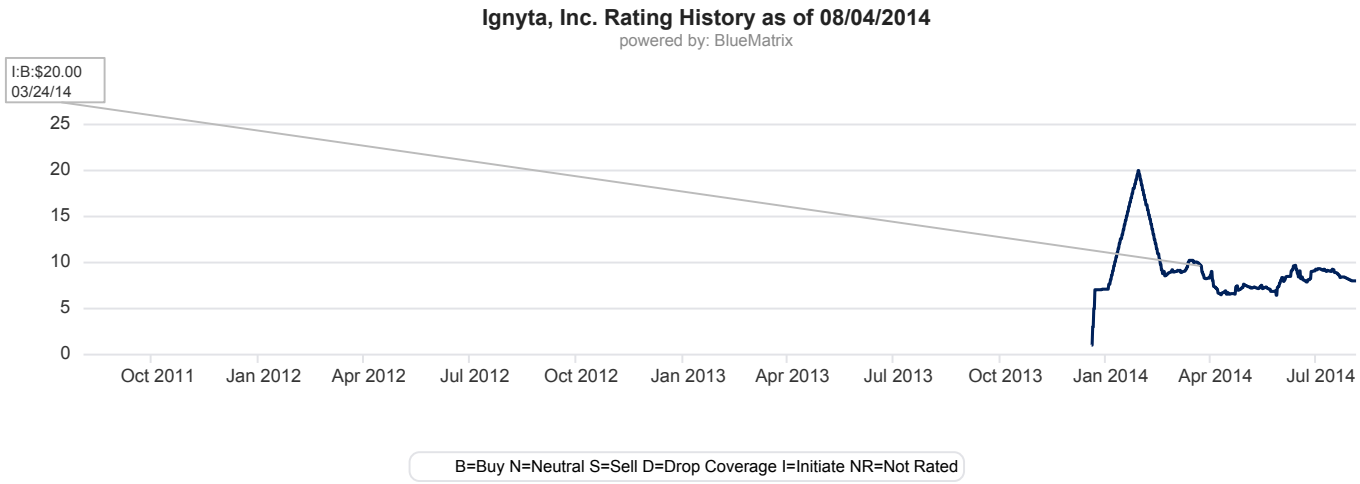
Ladenburg Thalmann & Co. Inc. has managed or co-managed a public offering for Ignyta, Inc. within the past 12 months.

Ladenburg Thalmann & Co. Inc. intends to seek compensation for investment banking and/or advisory services from Ignyta, Inc. within the next 3 months.

Ladenburg Thalmann & Co. Inc received compensation for investment banking services from Ignyta, Inc. within the past 12 months.

Ladenburg Thalmann & Co. Inc had an investment banking relationship with the Ignyta, Inc. within the last 12 months.

INVESTMENT RATING AND PRICE TARGET HISTORY



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