

Reason for report:

FLASH NOTE

## DICERNA PHARMACEUTICALS, INC.

### ALNY Patent Only Minor Setback; Solid Cash Position and Key 2015 Catalysts

• **Bottom Line:** ALNY announced today that the United States Patent and Trademark Office (USPTO) has issued a Notice of Allowance for its patent application 13/725,262. Based on our conversation with DRNA management today it appears that the allowed '262 patent application includes one claim that may potentially cover Dicer substrate RNAi triggers, such as used in DCR-MYC. Although this appears to be a setback for DRNA at first glance, the company may be able to invalidate the claim or in the worst case negotiate a very small royalty for DCR-MYC. With an enterprise value of only \$135M, we believe DRNA shares already trade at a steep discount to other RNAi players and we continue to believe DRNA has an attractive pipeline strategy, a proven management team, and a strong cash position (of \$120M), which we believe should suffice to advance the pipeline through several value inflection points.

• **Based on our conversation with DRNA management, the allowed '262 patent application includes one claim that may potentially cover Dicer substrate RNAi triggers, such as used in DCR-MYC.** Specifically, the amended Claim 81 of the allowed patent application claims "an isolated double-stranded RNA molecule, comprising: (i) a sense strand and an antisense strand that form a double-stranded region of up to 25 base pairs, said sense strand having an identity in the double-stranded region of at least 85 percent to a target RNA molecule; and (ii) at least one strand having a single -stranded 3'-overhang, wherein said 3'-overhang has been stabilized against degradation [...]".

• **Although this appears to be a small setback for DRNA, we believe the company could invalidate the claim or negotiate a very small royalty for DCR-MYC in a worst case scenario.** The issuance of the patent has not been unanticipated by DRNA and management feels good about its potential future invalidity defense, should ALNY claim infringement. We note that the Rossi patent (8,084,599) which forms DRNA's core IP claims a "duplex region of at least 25 nucleotides in length" where the "first strand has a length which is at least 25 and at most 30 nucleotides and wherein said second strand is 1-4 nucleotides longer at its 3' terminus than said first strand and forms a base-paired blunt end at its 5' terminus," among other specifications. Given that the new ALNY patent, which is part of the Tuschl estate, is expected to expire in 2021, we believe a potential future royalty/settlement value may be very small, should it come to that. As an example, ARWR is paying only a single-digit percentage royalty to ALNY for its RNAi products if commercialized and the original license to Roche dates back to 2007.

• **Based on our model, we have not expected a commercial launch of DCR-MYC before 2021.** Given a potential launch of DCR-MYC only after potential expiration of the '262 patent, we believe DRNA may not even infringe the patent, or overlap only for a short time period. DRNA's second product candidate DCR-PH1, of which the exact structure is still undisclosed, could potentially fall outside the claims of the '262 patent. Recall DRNA is still evaluating two PH1 product candidates preclinically

#### Key Stats:

(NASDAQ:DRNA)

<b>S&amp;P 600 Health Care Index:</b>	<b>1,314.55</b>
<b>Price:</b>	<b>\$14.27</b>
52 Week High:	\$46.00
52 Week Low:	\$13.33
Shares Outstanding (mil):	17.7
Market Capitalization (mil):	\$252.6

and will select one for Phase I clinical trials expected to initiate in 2015 based on results from non-human primate studies.

• **With an enterprise value of only \$135M, we believe DRNA shares already trade at a steep discount to other RNAi players.** We thus believe significant IP and pipeline risk has been baked in at current levels. We continue to believe DRNA has an attractive pipeline strategy, a proven management team and a strong cash position (of \$120M), which we believe should suffice to advance the pipeline through several value inflection points. We believe that first-in-man data for DCR-MYC and DCR-PH1 are key catalysts for the stock in 2015.

## Disclosures Appendix

### Analyst Certification

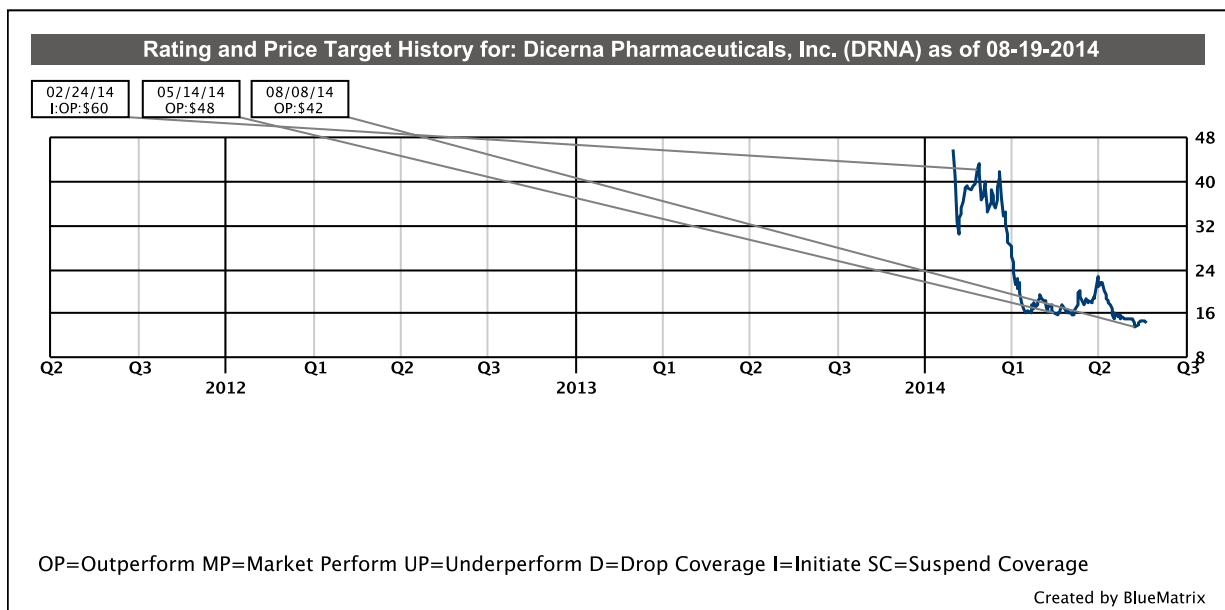
I, Michael Schmidt, Ph.D., certify that the views expressed in this report accurately reflect my views and that no part of my compensation was, is, or will be directly related to the specific recommendation or views contained in this report.

### Valuation

Our \$42 price target for DRNA shares in 12 months is based on a discounted cash flow (DCF) sum-of-parts analysis. Based on our DCF analysis, we attribute \$23/share to the pipeline, \$1/share to the KHK partnership, \$14/share to the platform, and the rest to net cash expected in one year. We use a 15% discount rate for probability of success-weighted pipeline products and a 15% discount rate for the DsiRNA technology platform. We probability-weight the MYC program at 20% and the PH1 program at 25% probability-of-success. We probability-weight the KRAS program at 15% POS and the second undisclosed candidate at 10% POS. We assume DRNA to receive a 9% royalty on worldwide sales for products under the KHK partnership. We value DRNA's technology platform using the assumption it will generate one additional new DsiRNA product candidate per year starting in 2015E. We discount assumed future profits and losses back using a 15% discount rate.

### Risks to Valuation

DRNA faces significant clinical and regulatory risks since all of its product candidates are currently in development. DRNA specifically also faces clinical development risk since none of its products have been tested in humans, and the company is developing first-in-class RNAi-based drugs with a novel proprietary delivery mechanism. In addition to that, DRNA's product candidates address new, clinically invalidated targets. Similar to many other developmental stage Biopharma companies, DRNA also faces manufacturing, competitive, commercial, regulatory, and safety risks, as well as risks to its intellectual property. In addition, DRNA faces financing risk dilutive to shareholders since we don't believe the company will be profitable for the foreseeable future. We see additional risks for investors since the company is closely held and substantially all of DRNA's outstanding shares are not subject to lock-up agreements in connection with its IPO.



Distribution of Ratings/Investment Banking Services (IB) as of 06/30/14				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [OP]	138	69.00	50	36.20
HOLD [MP]	62	31.00	2	3.20
SELL [UP]	0	0.00	0	0.00

## Explanation of Ratings

**Outperform (Buy):** We expect this stock to outperform its benchmark over the next 12 months.

**Market Perform (Hold/Neutral):** We expect this stock to perform in line with its benchmark over the next 12 months.

**Underperform (Sell):** We expect this stock to underperform its benchmark over the next 12 months. The degree of outperformance or underperformance required to warrant an Outperform or an Underperform rating should be commensurate with the risk profile of the company.

For the purposes of these definitions the relevant benchmark will be the S&P 600® Health Care Index for issuers with a market capitalization of less than \$2 billion and the S&P 500® Health Care Index for issuers with a market capitalization over \$2 billion.

## Important Disclosures

This information (including, but not limited to, prices, quotes and statistics) has been obtained from sources that we believe reliable, but we do not represent that it is accurate or complete and it should not be relied upon as such. All information is subject to change without notice. This is provided for information purposes only and should not be regarded as an offer to sell or as a solicitation of an offer to buy any product to which this information relates. The Firm, its officers, directors, employees, proprietary accounts and affiliates may have a position, long or short, in the securities referred to in this report, and/or other related securities, and from time to time may increase or decrease the position or express a view that is contrary to that contained in this report. The Firm's salespeople, traders and other professionals may provide oral or written market commentary or trading strategies that are contrary to opinions expressed in this report. The Firm's proprietary accounts may make investment decisions that are inconsistent with the opinions expressed in this report. The past performance of securities does not guarantee or predict future performance. Transaction strategies described herein may not be suitable for all investors. Additional information is available upon request by contacting the Editorial Department at One Federal Street, 37th Floor, Boston, MA 02110.

Like all Firm employees, analysts receive compensation that is impacted by, among other factors, overall firm profitability, which includes revenues from, among other business units, Institutional Equities, and Investment Banking. Analysts, however, are not compensated for a specific investment banking services transaction.

MEDACorp is a network of healthcare professionals, attorneys, physicians, key opinion leaders and other specialists accessed by Leerink and it provides information used by its analysts in preparing research.

**In the past 12 months, the Firm has received compensation for providing investment banking services to Dicerna Pharmaceuticals, Inc. .**

**Leerink Partners LLC makes a market in Dicerna Pharmaceuticals, Inc.**

**Leerink Partners LLC has acted as the manager for a public offering of Dicerna Pharmaceuticals, Inc. in the past 12 months.**

**©2014 Leerink Partners LLC. All rights reserved. This document may not be reproduced or circulated without our written authority.**

Leerink Partners LLC Equity Research			
--------------------------------------	--	--	--

<b>Director of Equity Research</b>	<b>John L. Sullivan, CFA</b>	(617) 918-4875	john.sullivan@leerink.com
<b>Associate Director of Research</b>	<b>Alice C. Avanian, CFA</b>	(617) 918-4544	alice.avanian@leerink.com
<b>Healthcare Strategy</b>	<b>John L. Sullivan, CFA</b>	(617) 918-4875	john.sullivan@leerink.com
	<b>Alice C. Avanian, CFA</b>	(617) 918-4544	alice.avanian@leerink.com
<b>Biotechnology</b>	<b>Howard Liang, Ph.D.</b>	(617) 918-4857	howard.liang@leerink.com
	<b>Joseph P. Schwartz</b>	(617) 918-4575	joseph.schwartz@leerink.com
	<b>Michael Schmidt, Ph.D.</b>	(617) 918-4588	michael.schmidt@leerink.com
	<b>Gena Wang, Ph.D., CFA</b>	(212) 277-6073	gena.wang@leerink.com
	Jonathan Chang, Ph.D.	(617) 918-4015	jonathan.chang@leerink.com
	Paul Matteis	(617) 918-4585	paul.matteis@leerink.com
	Richard Goss	(617) 918-4059	richard.goss@leerink.com
<b>Life Science Tools and Diagnostics</b>	<b>Dan Leonard</b>	(212) 277-6116	dan.leonard@leerink.com
	Justin Bowers, CFA	(212) 277-6066	justin.bowers@leerink.com
<b>Pharmaceuticals/Major</b>	<b>Seamus Fernandez</b>	(617) 918-4011	seamus.fernandez@leerink.com
	Ario Arabi	(617) 918-4568	ario.arabi@leerink.com
	Aneesh Kapur	(617) 918-4576	aneesh.kapur@leerink.com
<b>Specialty Pharmaceuticals</b>	<b>Jason M. Gerberry, JD</b>	(617) 918-4549	jason.gerberry@leerink.com
<b>Medical Devices, Cardiology &amp; Orthopedics</b>	<b>Danielle Antalffy</b>	(212) 277-6044	danielle.antalffy@leerink.com
	Puneet Souda	(212) 277-6091	puneet.souda@leerink.com
	<b>Richard Newitter</b>	(212) 277-6088	richard.newitter@leerink.com
	Ravi Misra	(212) 277-6049	ravi.misra@leerink.com
<b>Healthcare Services</b>	<b>Ana Gupte, Ph.D.</b>	(212) 277-6040	ana.gupte@leerink.com
<b>Healthcare Technology &amp; Distribution</b>	<b>David Larsen, CFA</b>	(617) 918-4502	david.larsen@leerink.com
	Christopher Abbott	(617) 918-4010	chris.abbott@leerink.com
<b>Sr. Editor/Supervisory Analyst</b>	<b>Mary Ellen Eagan, CFA</b>	(617) 918-4837	maryellen.eagan@leerink.com
<b>Supervisory Analysts</b>	Robert Egan		bob.egan@leerink.com
	Amy N. Sonne		amy.sonne@leerink.com
<b>Editorial</b>	Cristina Diaz-Dickson	(617) 918-4548	cristina.diaz-dickson@leerink.com
<b>Research Assistant</b>	Carmen Augustine	(212) 277-6012	carmen.augustine@leerink.com

New York	Boston	San Francisco
299 Park Avenue, 21 <sup>st</sup> floor	One Federal Street, 37 <sup>th</sup> Floor	201 Spear Street, 16 <sup>th</sup> Floor
New York, NY 10171	Boston, MA 02110	San Francisco, CA 94105
(888) 778-1653	(800) 808-7525	(800) 778-1164