



## Dicerna and Novo Nordisk Enter Agreement to Discover and Develop RNAi Therapies for Liver-Related Cardio-Metabolic Diseases

November 18, 2019

- Collaboration to Explore Liver Cell Targets Using Dicerna's GalXC™ Technology With the Potential to Deliver a Significant Number of Clinical Candidates –
  - Each Company to Retain Rights to Co-Develop and Co-Commercialize Product Candidates –
  - Dicerna to Receive Upfront Payment of USD 175 Million and Equity Investment of USD 50 Million –
  - Dicerna is Eligible to Receive an Additional USD 75 Million Over the First Three Years, Plus Up to USD 357.5 Million per Target in Potential Milestone Payments, and Royalties on Product Sales –
  - Dicerna to Host Conference Call Today at 8:00 a.m. ET –

LEXINGTON, Mass., & BAGSVÆRD, Denmark--(BUSINESS WIRE)--Nov. 18, 2019-- [Dicerna™Pharmaceuticals, Inc.](#) (Nasdaq: DRNA) and [Novo Nordisk A/S](#) today announced an agreement to discover and develop novel therapies for the treatment of liver-related cardio-metabolic diseases using Dicerna's proprietary GalXC™ RNAi platform technology. The collaboration plans to explore more than 30 liver cell targets and may deliver multiple clinical candidates for disorders including chronic liver disease, non-alcoholic steatohepatitis (NASH), type 2 diabetes, obesity, and rare diseases. Dicerna will conduct and fund discovery and preclinical development to clinical candidate selection for each liver cell target, and Novo Nordisk will be responsible for all further development.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20191118005269/en/>

The agreement represents a significant investment by Novo Nordisk to secure access to Dicerna's proprietary GalXC RNAi platform, which complements its existing technology base. The collaboration provides Novo Nordisk with the capability to inhibit hepatocyte targets involved in disease regulation and has the potential to generate a number of clinical development candidates.

"We are excited to collaborate with Novo Nordisk on this broad research and development effort that extends the reach of our GalXC platform to a wide range of liver cell targets and maximizes our opportunities in serious liver diseases," said Douglas M. Fambrough, Ph.D., president and chief executive officer of Dicerna. "Our efforts will benefit from Novo Nordisk's expertise in cardio-metabolic diseases and years of experience developing and commercializing innovative therapies worldwide, which will help us advance novel RNAi treatments for underserved patient populations."

The agreement enables each company to co-develop and co-commercialize product candidates discovered under the collaboration. Novo Nordisk will lead programs targeting cardio-metabolic disorders and other indications with Dicerna having the option to opt into two programs during clinical development. Dicerna retains rights to initiate two new orphan liver disease programs for which Novo Nordisk can opt in. For all co-development programs, the companies will share in the profit/loss of net sales of products consistent with each company's contribution to co-development costs.

"Through this important collaboration with Dicerna, we gain access to an innovative technology and deep expertise in RNA interference," said Marcus Schindler, senior vice president of Global Drug Discovery in Novo Nordisk. "Dicerna is the ideal partner to discover and develop molecules for targets that may yield multiple potential treatments across disease areas such as diabetes, obesity, cardiovascular, and NASH. We will work closely together to unlock the true potential of treating a range of diseases using RNAi therapies, for the benefit of patients."

Under the terms of the agreement, Dicerna will receive:

- An upfront payment of USD 175 million.
- A USD 50 million equity investment in Dicerna at a premium.
- USD 25 million annually during each of the first three years of the collaboration, contingent on Dicerna delivering RNAi molecules for a defined number of targets.
- Up to USD 357.5 million per target in development, regulatory, and commercialization milestone payments, plus tiered royalties on product sales ranging from the mid-single-digits to mid-teens.

The transaction is subject to the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 and other customary conditions.

### Dicerna Conference Call and Webcast Today

Dicerna management will host a conference call and webcast today, November 18, 2019, at 8:00 a.m. ET to discuss the collaboration. The conference call can be accessed by dialing (855) 453-3834 or +1 (484) 756-4306 (international) and referencing conference ID 6993687 prior to the start of the call. The call will also be webcast via the Internet and will be available under the "Investors & Media" section of the Dicerna website, [www.dicerna.com](http://www.dicerna.com). A replay of the call will be available approximately two hours after the completion of the call and will remain available for 30 days. To access the replay, please dial (855) 859-2056 or (404) 537-3406 and refer to conference ID 6993687. The webcast will also be archived on Dicerna's website.

### About Dicerna's GalXC™ RNAi Technology Platform

Dicerna's proprietary RNA interference (RNAi) technology platform, called GalXC™, aims to advance the development of next-generation RNAi-based therapies designed to silence disease-driving genes in the liver and other tissues. Liver-targeted GalXC-based compounds enable subcutaneous delivery of RNAi therapies that are designed to bind specifically to receptors on liver cells, leading to internalization and access to the RNAi machinery within the cells. The GalXC approach seeks to optimize the activity of the RNAi pathway so that it operates in the most specific and potent fashion. Compounds produced via GalXC are intended to be broadly applicable across multiple therapeutic areas, including both liver and non-liver indications.

#### **About Dicerna™ Pharmaceuticals, Inc.**

Dicerna™ Pharmaceuticals, Inc., is a biopharmaceutical company using ribonucleic acid (RNA) interference (RNAi) to develop medicines that silence genes that cause disease. The company is applying its proprietary GalXC™ technology to develop potent, selective, and safe RNAi therapies for treatment of rare diseases, chronic liver diseases, cardiovascular diseases, neurodegenerative diseases, pain, and viral infectious disease. Dicerna aims to treat disease by addressing the underlying causes of illness with capabilities that extend beyond the liver to address a broad range of diseases, focusing on target genes where connections between gene and disease are well understood and documented. Dicerna intends to discover, develop, and commercialize novel therapies either on its own or in collaboration with pharmaceutical partners. Dicerna has strategic collaborations with Novo Nordisk A/S, Roche, Eli Lilly and Company, Alexion Pharmaceuticals, Inc., and Boehringer Ingelheim International GmbH. For more information, please visit [www.dicerna.com](http://www.dicerna.com).

#### **About Novo Nordisk A/S**

Novo Nordisk is a global healthcare company with more than 95 years of innovation and leadership in diabetes care. This heritage has given us experience and capabilities that also enable us to help people defeat obesity, haemophilia, growth disorders and other serious chronic diseases. Headquartered in Denmark, Novo Nordisk employs approximately 42,200 people in 80 countries and markets its products in more than 170 countries. For more information, visit [novonordisk.com](http://novonordisk.com), [Facebook](#), [Twitter](#), [LinkedIn](#), [YouTube](#).

#### **Dicerna Forward-Looking Statements**

This press release includes forward-looking statements. Such forward-looking statements are subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements. Examples of forward-looking statements include, among others, statements we make regarding: (i) the full potential to leverage our GalXC platform to target and silence specific genes that contribute to cardio-metabolic diseases; (ii) the potential to earn revenue from royalties and milestone payments under the collaboration with Novo Nordisk; (iii) research and development plans related to GalXC and its utility in silencing genes that contribute to cardio-metabolic diseases; (iv) the potential of RNAi therapies for the treatment of cardio-metabolic diseases; and (v) the potential for the collaboration and co-commercialization of products by Novo Nordisk and Dicerna. The process by which an early-stage platform such as GalXC could potentially lead to an approved product is long and subject to highly significant risks, particularly with respect to a preclinical research collaboration. Applicable risks and uncertainties include those relating to preclinical research and other risks identified under the heading "Risk Factors" included in Dicerna's most recent quarterly report on Form 10-Q and in other filings made by the company with the Securities and Exchange Commission. The forward-looking statements contained in this press release reflect Dicerna's current views with respect to future events, and Dicerna does not undertake and specifically disclaims any obligation to update any forward-looking statements, except as required by law.

\* Novo Nordisk A/S and Roche transactions are subject to clearance under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 and other customary closing conditions.

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