



Press release

Dicerna Pharmaceuticals and Ipsen enter into an exclusive research collaboration for the development of new therapeutic agents in endocrinology and oncology

- **Ipsen's expertise in peptide engineering will be combined with Dicerna's exclusive Dicer Substrate Technology to develop innovative molecules as potential therapeutic agents**

PARIS (France) and WATERTOWN, Mass. (USA), 30 March 2010 – Dicerna Pharmaceuticals, Inc., (Dicerna) a second generation RNA interference (RNAi) company, and Ipsen (Euronext: FR0010259150; IPN), a global biotechnology specialty care group, announced today that the two companies have entered into an exclusive research collaboration agreement to leverage their expertise in Dicer Substrate siRNA (DsiRNA) research and peptide engineering. The companies will develop novel conjugates of Dicerna's DsiRNA molecules and Ipsen's peptide targeting vectors in the therapeutic areas of oncology and endocrinology.

RNAi is a key cellular mechanism regulating gene expression in both normal and disease processes. Based on gene sequence rather than protein structure, RNAi therapeutics have the potential to silence disease-causing genes using small synthetic RNA molecules, which may enable the development of new therapies for many acute and chronic diseases. The resulting target gene knockdown reduces gene expression in a way that is highly selective and specific.

"We are very excited to partner with Ipsen on this exclusive research collaboration. This agreement further advances our discovery efforts and provides us with the opportunity to develop Dicer Substrate siRNA therapies and targeted drug delivery systems while working with a partner who brings a unique peptide technology platform to the collaboration," said **James C. Jenson, Ph.D., Chief Executive Officer and co-founder of Dicerna**. "This is the second significant partnership with a major biopharmaceutical company that we have entered into in 2010, further validating our next generation Dicer Substrate Technology and our unique ability to generate a greater number of more potent gene silencing molecules."

"Combining Dicerna's Dicer Substrate Technology with Ipsen's innovative peptide technology that can target specific cell types of interest and mediate intracellular delivery of DsiRNA, will enable us to jointly explore a number of therapeutic programs in the areas of oncology and endocrinology," said **Claude Bertrand, Executive Vice-President, Chief Scientific Officer, Ipsen Group**. "We believe that this collaboration brings together two leading companies with unique and complementary technology platforms which could potentially lead to the discovery of breakthrough DsiRNA-based therapies."

About the collaboration

By combining Dicerna's proprietary Dicer Substrate Technology and DsiRNAs to silence disease-causing genes with Ipsen's peptide technology platform to allow cell-specific, intracellular delivery, the companies will conduct collaborative research aimed at identification of

new DsiRNA-based therapies with targeted delivery, superior potency and extended duration of action. Both companies will contribute their break-through technologies to the joint research collaboration. Dicerna and Ipsen may collaborate further to move the programs discovered under this partnership into development and eventual commercialization.

About Dicer Substrate RNAi

Dicer is a critical enzyme involved in the RNAi gene silencing cascade and acts earlier in the pathway, preparing double-stranded RNA for processing. Dicer then hands off these small RNA molecules to the mature gene silencing complex (RISC). Dicerna's synthetic Dicer Substrate siRNA (DsiRNA) molecules are 25 or more base pairs in length and take advantage of this natural and early entry point.

About Ipsen

Ipsen is a global biotechnology specialty care group with total sales in excess of 1 billion euros in 2009, and total worldwide staff of more than 4,400. Its strategy is based on fast growing specialty care drugs in oncology, endocrinology, neurology and hematology, and primary care drugs, which significantly contribute to research financing. This strategy is also supported by an active policy of partnerships. Ipsen's specific Research & Development (R&D) centers and peptide & protein engineering platform give the Group a competitive edge. Almost 900 people are dedicated to the discovery and development of innovative drugs for patient care. In 2009, R&D spend reached close to €200 million, representing more than 19% of total Group sales. Ipsen's shares are traded on *Segment A* of Euronext Paris (stock code: IPN, ISIN code: FR0010259150). Ipsen's shares are eligible to the "Service de Règlement Différé" ("SRD") and the Group is part of the SBF 120 index. For more information on Ipsen, visit our website at www.ipсен.com.

Forward-looking statement

The forward-looking statements, objectives, perspectives and targets contained herein are based on the Group's management strategy, current views, and assumptions regarded as reasonable by the Group. These forward-looking statements depend on conditions or facts likely to happen in the future, and not exclusively on historical data. Such statements involve known and unknown risks and uncertainties that the Group may not be able to control or mitigate and that may cause actual results, performance or events to differ materially from those anticipated herein. Moreover, the perspectives, objectives or targets described in this document were prepared without taking into account external growth assumptions which may alter these parameters. The Group does not commit nor gives any guarantee that it will meet the targets mentioned above. Furthermore, the Research and Development process involves several stages each of which involve the substantial risk that the Group may fail to achieve its objectives and be forced to abandon its efforts with regards to a product in which it has invested significant sums. Therefore, the Group cannot be certain that favorable results obtained during pre-clinical trials will be confirmed subsequently during clinical trials, or that the results of clinical trials will be sufficient to demonstrate the safe and effective nature of the product concerned. The Group expressly disclaims any obligation or undertaking to update or revise any forward looking statements, targets or estimates contained in this press release to reflect any change in events, conditions, assumptions or circumstances on which any such statements are based, unless so required by applicable law. The Group's business is subject to the risk factors outlined in its registration documents filed with the French Autorité des Marchés Financiers.

About Dicerna

Dicerna Pharmaceuticals is a private, venture-backed RNAi-focused biopharmaceutical company developing novel therapeutic agents and related drug delivery systems in multiple disease areas based on its proprietary Dicer Substrate Technology platform and Dicer Substrate siRNA (DsiRNA). The company is developing second generation DsiRNA-based therapies that engage the enzyme Dicer within cells, an early step in the gene silencing process, to exploit a natural initiation point for the RNAi cascade.

DsiRNA takes advantage of this distinct biological pathway, resulting in greater potency, longer duration of action and enhanced delivery potential, differentiating it from other RNAi approaches. Dicerna believes that its Dicer Substrate Technology is based on intellectual property that is both broadly enabling and distinct from other IP in the field. Dicerna has exclusive, worldwide rights to the Dicer Substrate Technology and has the sole right to grant sublicenses to the full portfolio of Dicer Substrate intellectual property. Dicerna has a major alliance with Kyowa Hakko Kirin for DsiRNA pharmaceuticals and drug delivery systems, initially focused on oncology, and a collaboration with Archemix to research novel conjugates of DsiRNA and aptamers for targeted delivery. Dicerna is based in Watertown, Massachusetts. For more information, please visit www.dicerna.com.

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