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ProNAi Therapeutics Raises \$59.5 Million Series D Financing

Proceeds Will Advance Clinical Studies of Its BCL2 Targeted Cancer Drug and Other Pipeline Candidates

Plymouth, MI—April 21, 2014. ProNAi Therapeutics, Inc., a developer of novel nucleic acid therapeutics, announced the closing of an oversubscribed \$59.5 million Series D financing. The round was led by Vivo Capital of Palo Alto, CA and included other new investors Frazier Healthcare Ventures, OrbiMed Advisors, Adams Street Partners, RA Capital Management, Caxton Alternative Management, Hopen Life Science Ventures, Sectoral Asset Management, and Janus Capital Management LLC. Existing investors including Capital Midwest Fund, Apjohn Ventures Fund, Amherst Fund, and Grand Angels also participated in the financing round. For the transaction, Jefferies LLC served as the sole placement agent and Honigman Miller Schwartz and Cohn LLP served as legal advisor to the company.

"This financing is a transformative milestone in ProNAi's ten year history, and follows the clinical results recently reported by the company and its clinical investigators. We are pleased to have attracted such an experienced and well regarded group of investors. Their support of this financing will allow us to execute our plans with greater speed and broader reach." said Mina Sooch MBA, President and Chief Executive Officer of ProNAi. "Since our founding, we have been committed to the development of novel nucleic acid therapeutics designed to treat various genetically defined diseases, initially in certain cancers, with a proprietary technology we have termed DNAi®. Our lead drug candidate, PNT2258, targets the BCL2 gene. The drug has shown early evidence of systemic anti-tumor effect when administered to patients whose cancers express the BCL2 genetic target. With the PNT2258 formulation, ProNAi has overcome the nucleic acid delivery challenges faced by competitive programs by incorporating our unique single stranded, chemically unmodified DNAi® oligonucleotide into a differentiated lipid delivery system (SMARTICLES®). The combination of genetic specificity with effective IV delivery provides us the opportunity to construct potential therapies with a broad range of targets in oncology and other diseases."

As part of the Series D financing, Albert Cha, MD, PhD (Vivo Capital), Peter Thompson, MD (OrbiMed Advisors), and James Topper, MD, PhD (Frazier Healthcare Ventures) have joined ProNAi's board of directors along with current members Chairman Donald Parfet (Apjohn Ventures) and Alvin Vitangcol (Capital Midwest Fund).

"ProNAi is developing a new class of DNAi therapeutics that has demonstrated promising results in lymphoma patients," said Dr. Albert Cha. "We are excited about the opportunity to move PNT2258 forward and further develop the company's pipeline."

The Series D funding will be used to advance PNT2258 in several Phase II clinical studies in patients with relapsed or treatment refractory non-Hodgkin's lymphoma including those with diffuse large B-cell lymphoma (DLBCL), Richter's transformation, and follicular lymphoma (FL). Proceeds will also be used to support drug manufacturing, advance development of preclinical drug candidates, and build ProNAi's organization in Michigan.

About PNT2258

PNT2258 is a 24-base, single-stranded, chemically-unmodified DNA oligonucleotide called PNT100 that is encapsulated in a specialized anionic and pH "tunable" liposome (SMARTICLES® owned by Marina Biotech, Inc. and licensed exclusively to ProNAi solely in the field of DNAi). In preclinical studies the beneficial activity of PNT2258 has been demonstrated as a single agent and in combination with CD20-targeted antibody therapy and other chemotherapeutic agents in a variety of hematological and solid tumor xenograft models. PNT2258 exhibited systemic exposure and cellular uptake, resulting in cell death by modulation of the BCL2 gene. To date, 35 patients have been treated with PNT2258 across the Phase I study (*Tolcher AW*, et al. 2014 Cancer Chemotherapy and Pharmacology 73(2): 363-371) and the pilot Phase II study (*Abstract#88*, Oral Presentation, Novel Agents in Lymphoma Therapy session, American Society of Hematology (ASH) Annual Meeting, December 2013).

About ProNAi Therapeutics, Inc

ProNAi Therapeutics, founded in 2004 in Michigan, has created a proprietary and differentiated DNA interference (DNAi®) technology. DNAi utilizes single-stranded, unmodified, phosphodiester DNA sequences designed against genomic DNA to modulate gene transcription. Beyond PNT2258, the company has a broad pipeline of DNAi leads for over 40 cancer and non-cancer targets, including CMYC, KRAS, PD-1, Hep B, and other inflammation and rare disease targets. ProNAi's business strategy is to establish multiple partnerships across its portfolio of DNAi drug candidates. For more information, visit www.pronai.com

Forward-Looking Statements

Statements made in this press release that look forward in time or that express expectations regarding future occurrences or anticipated outcomes or benefits are forward-looking statements. A number of risks and uncertainties, such as risks associated with product development and commercialization efforts, results of clinical trials, ultimate clinical outcomes and market acceptance of the Company's products to patients, intellectual property protection, and competitive product offerings, could cause actual events to differ from the expectations indicated in these forward-looking statements. As a result, you are cautioned not to put any undue reliance on any forward-looking statement. Except as required by law, the Company assumes no obligation to update the forward-looking statements, which are made as of the date hereof, even if new information becomes available in the future.