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ProNAi Therapeutics, Inc. Names New President and Chief Executive Officer

Plymouth, MI—September 3, 2014. ProNAi Therapeutics, Inc., a developer of novel nucleic acid therapeutics, announces the appointment Nick Glover, Ph.D. as President and Chief Executive Officer. The company's previous CEO, Mina Sooch, will be leaving the organization to pursue new opportunities.

Dr. Glover, an accomplished biotech executive, brings to ProNAi Therapeutics extensive experience in the field of oncology drug development. Dr. Glover most recently served as President and Chief Executive Officer of YM BioSciences Inc. (NYSE: YMI; TSX: YM), a publicly traded oncology drug development company acquired by Gilead Sciences Inc. in February 2013. Previously, Dr. Glover was President and Chief Executive Officer of Viventia Biotech Inc., a drug development company developing novel therapies for cancer, and Investment Manager at MDS Capital, a life sciences venture capital firm. He currently serves on the board of directors of MEI Pharma Inc., a company focused on cancer drug development (NASDAQ: MEIP). Dr. Glover holds a B.Sc. in chemistry from the University of East Anglia, Norwich, England and a Ph.D. in chemistry from Simon Fraser University, British Columbia, Canada.

On behalf of ProNAi's board, Chairman Donald Parfet said, "The Company's organization has reached a critical juncture. We have demonstrated an exciting therapeutic value in PNT2258, our lead product, and now need to accelerate our efforts with expanded late-stage clinical trials. By placing a leader with Nick's talents and demonstrated capabilities we significantly strengthen our abilities to commercialize the product line. " Mr. Parfet continued, "Nick's strong reputation in cancer drug development and his extensive experience leading public and private biotechnology companies make him a superb choice to lead ProNAi at this critical time."

"I've been highly impressed by the quality of the development and clinical work conducted by the ProNAi team, resulting in a portfolio of promising novel drug candidates. I am excited and honored to join ProNAi and look forward in particular to further advancing the clinical development of PNT2258, which has generated compelling results to date," stated Dr. Glover. "There is a significant need to develop and deliver therapies that will make a meaningful difference in the lives of cancer patients. ProNAi's proprietary DNAi technology is a promising emerging modality that has the potential to yield impactful oncology therapeutics, and I look forward to leading the company and bringing these novel treatments to patients."

Donald Parfet continued: "On behalf of all of ProNAi's stakeholders I would like to thank Mina Sooch for her outstanding contributions to the Company. ProNAi has made great strides under Mina's stewardship, raising significant capital, and successfully positioning ProNAi for aggressive growth and value creation. Mina is a talented entrepreneur and seasoned life sciences executive, and we wish her every success in her future endeavors."

About PNT2258

PNT2258 comprises a 24-base, single-stranded, chemically-unmodified DNA oligonucleotide PNT100 encapsulated in a specialized anionic and pH-sensitive liposome. 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 Phase I (Tolcher AW, et al. 2014 Cancer Chemotherapy and Pharmacology 73(2): 363-371) and pilot Phase II studies (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 is advancing DNA interference (DNAi®) technology, a proprietary and differentiated nucleic acid therapeutic modality. DNAi utilizes single-stranded, unmodified, phosphodiester DNA sequences designed to specifically hybridize to genomic DNA and modulate gene transcription. Beyond PNT2258, the company is developing DNAi assets against other cancer and non-cancer targets. 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. You should not place undue reliance on forward-looking statements because they speak only as of the date when made and may turn out to be inaccurate. We do not assume any obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. We may not actually achieve the plans, projections or expectations disclosed in forward-looking statements, and actual results, developments or events could differ materially from those disclosed in the forward-looking statements.