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Navidea Reports Manocept™ Study Results in Rheumatoid Arthritis Presented at EULAR 2015 European Congress of Rheumatology

DUBLIN, Ohio--(BUSINESS WIRE)-- Navidea Biopharmaceuticals (NYSE MKT:NAV), announced that results from several pre-clinical Manocept™ studies in rheumatoid arthritis (RA) were presented at the EULAR 2015 **European Congress of Rheumatology in Rome, Italy from June 10-13, 2015**. The results of studies, led by Wael Jarjour, Thomas J. Rosol and Larry S. Schlesinger of The Ohio State University Wexner Medical Center, highlighted the potential of CD206-targeting Manocept constructs to detect immune-mediated inflammation in RA which could be used diagnostically, to monitor therapeutic efficacy or as a potential therapeutic platform.

“Diagnosing patients with RA can be challenging because the commonly used laboratory assays are negative in 20% of affected patients. Additionally, there are limited reliable tools to assess disease activity and guide therapy in patients with difficult clinical presentations,” said Wael Jarjour, M.D., Associate Professor and Director, Division of Rheumatology & Immunology, The Ohio State University Wexner Medical Center. “We believe that Manocept-targeting of macrophages shows promise in detecting immune-mediated inflammation in RA and could potentially be used diagnostically or to monitor therapeutic efficacy in patients.”

“These studies continue to support our vision for the Manocept platform to further develop diagnostic and therapeutic applications and are very relevant to our ongoing joint venture with RNAV focused on RA,” said Frederick O. Cope, Ph.D. FACN, Navidea’s Chief Scientific Officer. “We envision future studies in this area will be undertaken to explore the applicability of these observations in prodromal and established patients and further to investigate the potential of Manocept platform therapeutically to either inhibit macrophage function or modulate macrophage activity.”

The oral presentation entitled, “*Manocept, a Derivative of FDA-Approved 99mTc-Tilmanocept, Exhibits Diagnostic Potential by Specifically Identifying Macrophages in Rheumatoid Arthritis: A Novel Application of an Existing Drug*,” (DOI: 10.1136/annrhumdis-2015-eular.4876) showed results from synovial fluid and tissue acquired from RA patients for comparison to normal frozen archival tissue and synovial tissue procured from patients with osteoarthritis (OA). Tissues were probed with Manocept-Cy3, DAPI nuclear stain, and anti CD206-cyanine. Mononuclear cells were isolated from RA synovial fluid and analyzed by flow cytometry. Results demonstrated that archival synovial tissue and synovial fluid obtained from patients diagnosed with RA contain a significant population of macrophages that express high-levels of the CD206 receptor. It was shown that these macrophages strongly co-localize Manocept-Cy3 and CD206 receptors. The degree of macrophage

infiltration in tissue from healthy or osteoarthritic patients was significantly lower than in RA tissues. Additionally in an *in vivo* animal study, arthritis was induced in mice and was followed with intravenous injection of Manocept-Cy3 and epi-fluorescent imaging. Imaging results indicated that Manocept can be detected in inflamed joints in an *in vivo* animal model of RA. The abstract is available at: http://www.congress.eular.org/scientific_programme.cfm.

About the Manocept™ CD206-targeting platform

The Manocept™ platform is predicated on the ability to specifically target the CD206 mannose receptor expressed on macrophages. Macrophages play important roles in many disease states and are an emerging target in many disorders. This flexible and versatile platform acts as an engine for purpose-built molecules that may enhance diagnostic accuracy, clinical decision-making, targeted treatments and ultimately patient care. As a diagnostic tool, the Manocept technology has the potential to utilize a breadth of imaging modalities, including SPECT, PET, intra-operative and/or optical-fluorescence detection. By adding a therapeutic agent on the Manocept molecular backbone, there is the potential to develop novel, targeted immunotherapies specifically designed to selectively deliver an agent that can kill or alter disease-associated macrophages. Navidea's FDA-approved precision diagnostic imaging agent, Lymphoseek® (technetium 99m tilmanocept) injection, is representative of the platform's ability to successfully exploit this mechanism and offer the potential for development of new CD206-targeted diagnostic agents and therapeutics.

About Navidea

Navidea Biopharmaceuticals, Inc. (NYSE MKT:NAVB) is a biopharmaceutical company focused on the development and commercialization of precision diagnostics, therapeutics and radiopharmaceutical agents. Navidea is developing multiple precision-targeted products and platforms including Manocept™ and NAV4694 to help identify the sites and pathways of undetected disease and enable better diagnostic accuracy, clinical decision-making, targeted treatment and, ultimately, patient care. Lymphoseek® (technetium Tc 99m tilmanocept) injection, Navidea's first commercial product from the Manocept platform, was approved by the FDA in March 2013 and in Europe in November 2014. Navidea's strategy is to deliver superior growth and shareholder return by bringing to market novel radiopharmaceutical agents and therapeutics, and advancing the Company's pipeline through global partnering and commercialization efforts. For more information, please visit www.navidea.com.

The Private Securities Litigation Reform Act of 1995 (the Act) provides a safe harbor for forward-looking statements made by or on behalf of the Company. Statements in this news release, which relate to other than strictly historical facts, such as statements about the Company's plans and strategies, expectations for future financial performance, new and existing products and technologies, anticipated clinical and regulatory pathways, and markets for the Company's products are forward-looking statements within the meaning of the Act. The words "believe," "expect," "anticipate," "estimate," "project," and similar expressions identify forward-looking statements that speak only as of the date hereof. Investors are cautioned that such statements involve risks and uncertainties that could cause actual results to differ materially from historical or anticipated results due to many factors including, but not limited to, the Company's continuing operating losses, uncertainty of market acceptance of its products, reliance on third party manufacturers, accumulated deficit, future capital needs, uncertainty of capital funding, dependence on limited product

line and distribution channels, competition, limited marketing and manufacturing experience, risks of development of new products, regulatory risks and other risks detailed in the Company's most recent Annual Report on Form 10-K and other Securities and Exchange Commission filings. The Company undertakes no obligation to publicly update or revise any forward-looking statements.

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