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Navidea Awarded $1.8M Fast Track NIH SBIR Grant for Evaluation of a Manocept™ Agent in Kaposi's Sarcoma

DUBLIN, Ohio--(BUSINESS WIRE)-- Navidea Biopharmaceuticals, Inc. (NYSE MKT:NAVB) is announcing the receipt of an initial notice of award for a Fast Track Small Business Innovation Research (SBIR) grant providing for up to $1.8 million from the National Cancer Institute (NCI), National Institutes of Health (NIH), to fund preclinical studies examining the safety of intravenous(IV) injection of Tc99m tilmanocept, a Manocept™ platform product, followed by a clinical study providing the initial evaluation of the safety and efficacy of SPECT imaging studies with IV Tc99m tilmanocept to identify and quantify both skin- and organ-associated KS lesions in human patients.

The SBIR grant is awarded in two parts with the potential for total grant money of up to $1.8 million over two and a half years. The first six-month funding segment of $300,000, which has already been awarded, is expected to enable Navidea to secure necessary collaborations and Institutional Review Board (IRB) approvals. The second funding segment could provide for up to an additional $1.5 million to be used to accrue participants, perform the Phase 1/2 study and perform data analyses to confirm the safety and effectiveness of intravenously administered Tc99m tilmanocept.

"We appreciate the recurring support by the NIH which we believe reflects, in part, their confidence in the strength of our clinical development capabilities. This study reinforces our commitment to support the expanded use of Lymphoseek® (technetium Tc99m tilmanocept) injection to help patients afflicted with other solid tumor cancers," said Michael Tomblyn, M.D., Navidea's Chief Medical Officer. "Positive outcomes showing that intravenously injected Tc99m tilmanocept localizes specifically and at detectable levels in KS lesions would open the possibility that a Manocept-drug conjugate might be used to target delivery of therapeutics to KS lesions."

"Building on earlier research showing KS tumor cells abundantly express CD206, the tilmanocept receptor, and successful imaging with subcutaneous injection, we plan to evaluate intravenous administration of this targeted imaging agent to noninvasively locate internal KS lesions, which are currently challenging to identify and monitor," commented Toby Maurer, M.D., FAAD, Professor of Dermatology at the University of California, San Francisco (UCSF), and Chief of Dermatology at San Francisco General Hospital and Trauma Center, who is co-PI at UCSF with Michael S. McGrath, M.D., PhD. "If successful, future diagnostic and eventually therapeutic developments have the potential to dramatically improve life expectancies and quality of life for patients suffering from Kaposi's sarcoma."

About the Preclinical animal studies

Preclinical animal studies and laboratory test development will investigate the feasibility and support clinical protocol development for intravenous administration of Tc99m tilmanocept in human patients with KS and will include method development and validation for dose solution analysis and various pharmacology, pharmacokinetic and toxicology analysis in animals.

About the Phase 1/2 Clinical Study

This study has been designed as a single center, open-label, non-randomized, Phase 1/2 Clinical Study to evaluate intravenous injection of Tc99m tilmanocept into KS patients. The study, using imaging with single-photon emission computed tomography (SPECT) and likely, SPECT/CT, will evaluate the ability of Tc99m tilmanocept to identify KS lesions and bind to CD206 on KS cells and their tumor-associated macrophages (TAMs). Various doses of Tc99m tilmanocept will be evaluated. The study is expected to involve up to 48 patients with HIV- or transplant-associated KS and last 2 years. The goal of the study is to provide evidence evaluating the safety and efficacy as well as optimal dosing and timing of Tc99m tilmanocept as a SPECT imaging agent for KS lesions.

About Kaposi's Sarcoma

Kaposi sarcoma (KS) is a cancer that develops from the cells that line lymph nodes or blood vessels. It usually appears as tumors on the skin or on mucosal surfaces such as inside the mouth, but tumors can also develop in other parts of the body, such as in the lymph nodes (bean-sized collections of immune cells throughout the body), the lungs, or digestive tract. The abnormal cells of KS form purple, red, or brown blotches or tumors on the skin. These affected areas are called lesions. The skin lesions of KS most often appear on the legs or face. AIDS-related KS is the most common type of KS in the United States and develops in people who are infected with HIV, the virus that causes AIDS. KS can also develop in people whose immune systems have been suppressed after an organ transplant and is called transplant-related KS.[1]

About Lymphoseek

Lymphoseek® (technetium Tc 99m tilmanocept) injection is the first and only FDA-approved receptor-targeted lymphatic mapping agent. It is a novel, receptor-targeted, small-molecule radiopharmaceutical used in the evaluation of lymphatic basins that may have cancer involvement in patients. Lymphoseek is designed for the precise identification of lymph nodes that drain from a primary tumor, which have the highest probability of harboring cancer. Lymphoseek is approved by the U.S. Food and Drug Administration (FDA) for use in solid tumor cancers where lymphatic mapping is a component of surgical management and for guiding sentinel lymph node biopsy in patients with clinically node negative breast cancer, melanoma or squamous cell carcinoma of the oral cavity. Lymphoseek has also received European approval in imaging and intraoperative detection of sentinel lymph nodes in patients with melanoma, breast cancer or localized squamous cell carcinoma of the oral cavity.

Accurate diagnostic evaluation of cancer is critical, as it guides therapy decisions and determines patient prognosis and risk of recurrence. Overall in the U.S., solid tumor cancers may represent up to 1.2 million cases per year. The sentinel node label in the U.S. and Europe may address approximately 235,000 new cases of breast cancer, 76,000 new cases

of melanoma and 45,000 new cases of head and neck/oral cancer in the U.S., and approximately 367,000 new cases of breast cancer, 83,000 new cases of melanoma and 55,000 new cases of head and neck/oral cancer diagnosed in Europe annually.

Lymphoseek Indication and Important Safety Information

Lymphoseek is a radioactive diagnostic agent indicated with or without scintigraphic imaging for:

- Lymphatic mapping using a handheld gamma counter to locate lymph nodes draining a primary tumor site in patients with solid tumors for which this procedure is a component of intraoperative management.
- Guiding sentinel lymph node biopsy using a handheld gamma counter in patients with clinically node negative squamous cell carcinoma of the oral cavity, breast cancer or melanoma.

Important Safety Information

In clinical trials with Lymphoseek, no serious hypersensitivity reactions were reported, however Lymphoseek may pose a risk of such reactions due to its chemical similarity to dextran. Serious hypersensitivity reactions have been associated with dextran and modified forms of dextran (such as iron dextran drugs).

Prior to the administration of Lymphoseek, patients should be asked about previous hypersensitivity reactions to drugs, in particular dextran and modified forms of dextran. Resuscitation equipment and trained personnel should be available at the time of Lymphoseek administration, and patients observed for signs or symptoms of hypersensitivity following injection.

Any radiation-emitting product may increase the risk for cancer. Adhere to dose recommendations and ensure safe handling to minimize the risk for excessive radiation exposure to patients or health care workers.

In clinical trials, no patients experienced serious adverse reactions and the most common adverse reactions were injection site irritation and/or pain (<1%).

FULL LYMPHOSEEK PRESCRIBING INFORMATION CAN BE FOUND AT:

WWW.LYMPHOSEEK.COM

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.

[1] American Cancer Society web accessed 22May2015.
http://www.cancer.org/cancer/kaposisarcoma/detailedguide/kaposi-sarcoma-what-is-kaposi-sarcoma

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