Lantheus and RefleXion Announce Development and Commercialization Collaboration with the Potential to Improve Future Prostate Cancer Treatment

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NORTH BILLERICA, Mass. and HAYWARD, Calif., Sept. 13, 2021 (GLOBE NEWSWIRE) -- Lantheus Holdings, Inc. (NASDAQ: LNTH) (Lantheus) and RefleXion Medical, Inc., today announced a development and commercialization collaboration to evaluate the use of piflufolastat F 18, Lantheus' prostate-specific membrane antigen (PSMA)-targeted positron emission tomography (PET) imaging agent, to enable real-time therapeutic guidance of biology-guided radiotherapy[1] (BgRT) in prostate cancer using the RefleXion X1™ platform.

Lantheus is an established leader and fully integrated provider committed to innovative imaging diagnostics, targeted therapeutics and artificial intelligence solutions to find, fight and follow serious medical conditions. RefleXion is a therapeutic oncology company pioneering BgRT as a new modality for treating all stages of cancer.

"Combining BgRT with piflufolastat F 18 to detect metastasis in prostate cancer is a promising advancement that may improve patient outcomes," said Jeffrey Wong, MD, Professor of Radiation Oncology at the City of Hope Cancer Center. "Piflufolastat F 18 helps provide an accurate understanding of the location and extent of disease, which is key to creating an effective treatment plan. The potential of RefleXion's BgRT to interpret that reliable location information and guide precise radiotherapy delivery in real-time is unprecedented."

The RefleXion X1 is the first platform that integrates PET technology into a therapeutic radiation delivery device to enable radiation to be guided in real-time to tumor sites localized by the PET tracer. This approach has the potential to use the tumor's biology, as characterized by the PET tracer, to guide radiation delivery to multiple cancer sites within a patient in a single session. The RefleXion X1 technology has potential advantages over conventional radiotherapy, as it may, when fully realized, enable treatment of more tumors per session, increase accuracy of radiation delivery to tumor sites and reduce toxicity to healthy tissue, and facilitate treatment of more widespread disease than is practical or tolerable with conventional radiotherapy.[2] PET PSMA, as a highly sensitive and specific approach to localizing prostate cancer in tumor, lymph nodes, and distant metastatic sites, offers unique potential to bring the promise of RefleXion's novel technology to prostate cancer therapy.

"By combining the sensitivity and specificity of piflufolastat F 18 with the potential of our BgRT for treating local, regional and metastatic prostate cancer, we expect to have the future ability to address prostate cancer patients in a very specific, highly precise manner," said Thorsten Melcher, Ph.D., Chief Business Officer at RefleXion. "This new customized approach is uniquely enabled by RefleXion's BgRT technology, which could unlock the potential of PET radiotracers, such as piflufolastat F 18, to provide real-time therapeutic guidance."

The Development and Commercial Collaboration Agreement, which will be managed by a Joint Steering Committee, is focused on obtaining approval to treat patients with BgRT guided by piflufolastat F 18 in the United States. Under the terms of the agreement, Lantheus will contribute to the cost of RefleXion's registrational program. Additionally, the parties will share in the upside created by this collaboration. Further terms of the agreement were not disclosed.

"Lantheus is committed to advancing and expanding our PSMA platform with innovative solutions to find, fight and follow cancer," said Etienne Montagut, Chief Business Officer at Lantheus. "We are excited to potentially expand the use of piflufolastat F 18 through this collaboration with RefleXion with the goal of improving treatment options for prostate cancer patients."

About Piflufolastat F 18 Injection

Piflufolastat F 18 injection (also known as ^{18}F-DCFPyL or PyL) is a fluorinated small molecule PSMA-targeted PET imaging agent that enables visualization of lymph nodes, bone and soft tissue metastases to determine the presence or absence of recurrent and/or metastatic prostate cancer. For men with prostate cancer, piflufolastat F 18 PET combines the accuracy of PET imaging, the precision of PSMA targeting and the clarity of an F 18 radioisotope[6] for superior diagnostic performance. The recommended piflufolastat F 18 dose is 333 MBq (9 mCi) with an acceptable range of 296 MBq to 370 MBq (8 mCi to 10 mCi), administered as a bolus intravenous injection.[3-8]

About Prostate Cancer

Prostate cancer is the second most common form of cancer affecting men in the United States -- an estimated one in eight men will be diagnosed with prostate cancer in their lifetimes. The American Cancer Society estimates that in 2021, almost 250,000 new cases of prostate cancer will be diagnosed, and more than 30,000 men will die of the disease. Approximately 3.1 million men in the United States currently count themselves as prostate cancer survivors.[9]

PYLARIFY® (piflufolastat F 18) Injection

Indication
PYLARIFY® (piflufolastat F 18) Injection is a radioactive diagnostic agent indicated for positron emission tomography (PET) of prostate-specific membrane antigen (PSMA) positive lesions in men with prostate cancer:

- with suspected metastasis who are candidates for initial definitive therapy.
- with suspected recurrence based on elevated serum prostate-specific antigen (PSA) level.

Important Safety Information
Contraindications
None.

Warnings and Precautions
Risk of Image Misinterpretation
Imaging interpretation errors can occur with PYLARIFY imaging. A negative image does not rule out the presence of prostate cancer and a positive image does not confirm the presence of prostate cancer. The performance of PYLARIFY for imaging of patients with biochemical evidence of recurrence of prostate cancer seems to be affected by serum PSA levels. The performance of PYLARIFY for imaging of metastatic pelvic lymph nodes prior to initial definitive therapy seems to be affected by risk factors such as Gleason score and tumor stage. PYLARIFY uptake is not specific for prostate cancer and may occur with other types of cancer as well as non-malignant processes and in normal tissues. Clinical correlation, which may include histopathological evaluation of the suspected prostate cancer site, is recommended.

Hypersensitivity Reactions
Monitor patients for hypersensitivity reactions, particularly patients with a history of allergy to other drugs and foods. Reactions may be delayed. Always have trained staff and resuscitation equipment available.

Radiation Risks
Diagnostic radiopharmaceuticals, including PYLARIFY, expose patients to radiation. Radiation exposure is associated with a dose-dependent increased risk of cancer. Ensure safe handling and preparation procedures to protect patients and health care workers from unintentional radiation exposure. Advise patients to hydrate before and after administration and to void frequently after administration.

Adverse Reactions
The most frequently reported adverse reactions were headaches, dysgeusia and fatigue, occurring at rate of ≤2% during clinical studies with PYLARIFY. In addition, a delayed hypersensitivity reaction was reported in one patient (0.2%) with a history of allergic reactions.

Drug interactions
Androgen deprivation therapy (ADT) and other therapies targeting the androgen pathway, such as androgen receptor antagonists, may result in changes in uptake of PYLARIFY in prostate cancer. The effect of these therapies on performance of PYLARIFY PET has not been established.
To report suspected adverse reactions for PYLARIFY, call 1-800-362-2668 or contact FDA at 1-800-FDA-1088 or **www.fda.gov/medwatch**.

For important risk and use information about PYLARIFY Injection, please see **Full Prescribing information**.

About Lantheus Holdings, Inc.
Lantheus Holdings, Inc. is the parent company of Lantheus Medical Imaging, Inc., Progenics Pharmaceuticals, Inc. and EXINI Diagnostics AB and an established leader and fully integrated provider committed to innovative imaging diagnostics, targeted therapeutics and artificial intelligence solutions to Find Fight and Follow® serious medical conditions. Lantheus provides a broad portfolio of products, including the echocardiography agent DEFINITY® Vial for (Perflutren Lipid Microsphere) Injectable Suspension; PYLARIFY®, a PSMA PET imaging agent for the detection of suspected recurrent or metastatic prostate cancer; TechneLite® (Technetium Tc99m Generator), a technetium-based generator that provides the essential medical isotope used in nuclear medicine procedures; AZEDRA® for the treatment of certain rare neuroendocrine tumors; and RELISTOR® for the treatment of opioid-induced constipation, which is partnered with Bausch Health Companies, Inc. The Company is headquartered in North Billerica, Massachusetts with offices in New York, New Jersey, Canada and Sweden. For more information, visit www.lantheus.com.

About RefleXion Medical, Inc.
RefleXion is a privately held commercial stage company developing the first biology-guided radiotherapy (BgRT) system, a significant change in strategy from single tumor therapy to the ability to one day treat multiple tumors in the same treatment session in cancers that have metastasized. BgRT incorporates positron-emission tomography imaging data to enable tumors to continuously signal their location. The BgRT technology will synchronize these data with the linear accelerator to direct radiotherapy to tumors with sub-second latency.

Safe Harbor for Forward-Looking and Cautionary Statements
This press release contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, that are subject to risks and uncertainties and are made pursuant to the safe harbor provisions of Section 27A

of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements may be identified by their use of terms such as “believe,” “expect,” “intend,” “potential,” “will” and other similar terms. Such forward-looking statements are based upon current plans, estimates and expectations that are subject to risks and uncertainties that could cause actual results to materially differ from those described in the forward-looking statements. The inclusion of forward-looking statements should not be regarded as a representation that such plans, estimates and expectations will be achieved. Readers are cautioned not to place undue reliance on the forward-looking statements contained herein, which speak only as of the date hereof. Neither Lantheus Holdings, Inc. (Lantheus) nor RefleXion Medical, Inc. (RefleXion) undertake any obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law. Risks and uncertainties that could cause our actual results to materially differ from those described in the forward-looking statements include (i) the timing and potential outcomes of clinical studies evaluating the use of RefleXion X1 with PYLARIFY in BgRT to interpret reliable location information and guide precise radiotherapy delivery to treat prostate cancer; (ii) RefleXion’s ability to obtain marketing clearance for the RefleXion X1’s use of PYLARIFY in guiding BgRT from the U.S. Food and Drug Administration (FDA), (iii) RefleXion’s ability to successfully expand the use of BgRT; (iv) Lantheus’ ability to successfully launch PYLARIFY as a commercial product, including (A) Lantheus’ ability to obtain FDA approval for additional PET manufacturing facilities (PMFs) that could manufacture PYLARIFY, (B) the ability of those PMFs to supply PYLARIFY to customers, and (C) Lantheus’ ability to sell PYLARIFY to customers; and (v) the risk and uncertainties discussed in Lantheus’ filings with the Securities and Exchange Commission (including those described in the Risk Factors section in its Annual Reports on Form 10-K and its Quarterly Reports on Form 10-Q).

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[1]The RefleXion™ X1 is cleared for SBRT/SRS/IMRT. BgRT is limited byU.S. law to Investigational use.

[2] Shirvani SM, Huntzinger CJ, Melcher T, Olcott PD, Voronenko Y, Bartlett-Roberto J, et al. Biology-guided radiotherapy: redefining the role of radiotherapy in metastatic cancer. Br J Radiol 2020; 94: 20200873.

[3]Mena et al. 18 F-DCFPyL PET/CT Imaging in Patients with Biochemically Recurrent Prostate Cancer After Primary Local Therapy J Nucl Med 2020 Jun;61(6):881-889. doi: 10.2967/jnumed.119.234799. Epub 2019 Nov 1.

[4]Alipour et al. Guiding management of therapy in prostate cancer: time to switch from conventional imaging to PSMA PET? Ther Adv Med Oncol. 2019; 11: 1758835919876828.

[5]Werner et al 18F-Labeled, PSMA-Targeted Radiotracers: Leveraging the Advantages of Radiofluorination for Prostate Cancer Molecular Imaging Theranostics 2020; 10(1):1-16. doi:10.7150/thno.37894.

[6]Petersen LJ, Zacho HD. PSMA PET for primary lymph node staging of intermediate and high-risk prostate cancer: an expedited systematic review. Cancer Imaging. 2020;20(1):1-8. doi:10.1186/s40644-020-0290-

[7]Tan N, Oyoyo U, Bavadian N, et al. PSMA-targeted radiotracers versus 18F fluciclovine for the detection of prostate cancer biochemical recurrence after definitive therapy: a systematic review and meta-analysis. Radiology. 2020;296:44-55. doi:10.1148/radiol.2020191689

[8]PYLARIFY® [package insert]. North Billerica, MA: Progenics Pharmaceuticals, Inc., a Lantheus company

[9]American Cancer Society. Facts & Figures 2021. American Cancer Society. Atlanta, GA. 2021.

Source: Lantheus Holdings, Inc.

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