



## PRESS RELEASE

### **Blue Earth Diagnostics Announces Highlights of Technical University of Munich Presentations on Initial Clinical Experience with $^{18}\text{F}$ -rhPSMA-7 PET Imaging in High Risk Primary and Biochemical Recurrent Prostate Cancer**

*- Results with investigational radiohybrid PSMA-targeted compound presented at SNMMI -*

**BURLINGTON, Mass. and OXFORD, UK, June 26, 2019** – Blue Earth Diagnostics, a molecular imaging diagnostics company, today announced results from early clinical experience in Germany with positron emission tomography (PET) (PET/CT or PET/MRI) imaging using a radiohybrid Prostate Specific Membrane Antigen-targeted compound ( $^{18}\text{F}$ -rhPSMA-7). The presentations were made by the Technical University of Munich (TUM) and Ludwig-Maximilian-University (LMU), Munich. Blue Earth Diagnostics acquired exclusive rights to a broad family of rhPSMA agents in 2018. Presentations included early clinical experience with  $^{18}\text{F}$ -rhPSMA-7 PET in the detection of biochemical prostate cancer recurrence in patients after radical prostatectomy, after radiation therapy and in high risk primary prostate cancer patients. Additional presentations described the biodistribution profile of  $^{18}\text{F}$ -rh-PSMA-7, the initial clinical proof-of-concept evaluation, chemical labeling and GMP production of the radiohybrid compound, and dosimetry and biodistribution characteristics for  $^{18}\text{F}$ -rhPSMA-7 and one of its four isomers,  $^{18}\text{F}$ -rhPSMA-7.3. Results were presented at the Society of Nuclear Medicine and Molecular Imaging Annual Meeting (SNMMI), from June 22 – 26, 2019 in Anaheim, Ca.

NOTE: this early clinical experience with  $^{18}\text{F}$ -rhPSMA-7 by TUM in Germany, consistent with the German Medicinal Products Act 13 (2b), reflects use of an investigational agent for which safety and efficacy have not been established by the U.S. Food and Drug Administration.

“We are very pleased that TUM and LMU are able to share their initial clinical experiences with  $^{18}\text{F}$ -rhPSMA-7 in multiple presentations to the nuclear medicine community at SNMMI,” said Jonathan Allis, D. Phil., CEO of Blue Earth Diagnostics. “Blue Earth Diagnostics’ acquisition of rhPSMA has expanded our technologically advanced PET imaging portfolio, and complements approved, commercially available Axumin® (fluciclovine F 18). We believe that both agents may ultimately provide physicians and their patients living with prostate cancer the ability to select the diagnostic agent most appropriate to each specific clinical situation. Based on results from these studies, we are progressing the isomer  $^{18}\text{F}$ -rhPSMA-7.3 as a lead imaging candidate for further development.”

“Effective staging of primary prostate cancer and determining the extent and location of recurrent disease can inform an appropriate clinical management plan specific for each patient,” said Wolfgang Weber, MD, Department of Nuclear Medicine, Klinikum rechts der Isar, TUM. “This is an important consideration for physicians and their patients, as between 30 – 40% of men with prostate cancer will develop local or distant recurrences after radical prostatectomy or radiation therapy. Our early clinical use of  $^{18}\text{F}$ -rhPSMA-7 PET imaging at TUM reflects our experiences in prostate cancer patients with biochemical recurrence after radical prostatectomy, after radiation therapy and in primary disease. These preliminary data are encouraging and support further research with rhPSMA.”

“Initial experience with  $^{18}\text{F}$ -rhPSMA-7 at TUM has allowed us to investigate the potential diagnostic performance of a new class of PSMA-targeting agents that enable efficient labelling with imaging radioisotopes such as  $^{18}\text{F}$  for PET imaging,” said Matthias Eiber, MD, Department of Nuclear Medicine, Klinikum rechts der Isar, TUM. “Based on the half-life of the  $^{18}\text{F}$  radioisotope,  $^{18}\text{F}$ -labeled PSMA-targeted imaging agents can offer efficient distribution and broad availability, outside of select academic research institutions, as well as rapid production, consistent, centralized manufacturing and high resolution PET scans, all of which are important considerations in detecting and localizing prostate cancer.”

#### Highlights of TUM $^{18}\text{F}$ -rhPSMA-7 PET/CT Clinical Presentations at SNMMI

- In an oral presentation, “ *$^{18}\text{F}$ -rhPSMA-7 positron emission tomography (PET) for the detection of biochemical recurrence of prostate cancer following curative-intent radiation therapy*,” Dr. Harun Ilhan of LMU, Munich, presented results of a retrospective analysis of 78 patients who had biochemical recurrence of prostate cancer after primary radiation therapy.  $^{18}\text{F}$ -rhPSMA-7 PET/CT demonstrated a detection rate (DR) of 94% (73/78).
- In second oral presentation, “ *$^{18}\text{F}$ -rhPSMA-7 positron emission tomography (PET) for the detection of biochemical recurrence of prostate cancer following radical prostatectomy*,” Dr. Matthias Eiber of TUM described results from a retrospective analysis of 532 patients with biochemically recurrent prostate cancer after radical prostatectomy in which  $^{18}\text{F}$ -rhPSMA-7 PET/CT or PET/MRI demonstrated a DR of 79.5% (423/532) at a median PSA level of 0.97 ng/mL. The DR in patients with a PSA of 0.2- $<$ 0.5ng/mL was 63.8% (81/127).
- Dr. Markus Kroenke of TUM presented results of a retrospective analysis of 58 patients with high risk primary prostate cancer which indicated that  $^{18}\text{F}$ -rhPSMA-7 PET/CT or PET/MRI demonstrated sensitivity of 72% (13/18), specificity of 93% (37/40) and diagnostic accuracy 86% (50/58), when compared to histopathological findings in a poster presentation, “*Histologically-confirmed diagnostic efficacy of  $^{18}\text{F}$ -rhPSMA-7 positron emission tomography for N-staging of patients with high risk primary prostate cancer*.”
- Dr. Oh of TUM and Seoul National University Boramae Medical Center presented a poster, “*Quantitative and qualitative analysis of biodistribution and PET image quality of novel radiohybrid PSMA ligand,  $^{18}\text{F}$ -rhPSMA-7, in patients with prostate cancer*,” which described a study to evaluate the optimum activity and imaging timepoint when using  $^{18}\text{F}$ -rhPSMA-7 to image patients with prostate cancer. The analysis showed stable uptake of  $^{18}\text{F}$ -rhPSMA-7 across multiple uptake times and administered activities, with an early imaging timepoint of 50 – 70 minutes recommended.
- A poster presentation by Dr. Oh, “*Preclinical dosimetry and human biodistribution of  $^{18}\text{F}$ -rhPSMA-7 and  $^{18}\text{F}$ -rhPSMA-7.3*,” compared preclinical dosimetry and human biodistribution characteristics of  $^{18}\text{F}$ -rhPSMA-7.3, one of the four isomers of  $^{18}\text{F}$ -rhPSMA-7, with that of the parent racemic compound. Standardized Uptake Value ( $\text{SUV}_{\text{mean}}$ ) for renal uptake and bladder retention were 55.2 and 10.2, respectively, for  $^{18}\text{F}$ -rhPSMA-7 and 35.5 and 2.0, respectively, for  $^{18}\text{F}$ -rhPSMA-7.3. Tumor uptake ( $\text{SUV}_{\text{mean}}$ ) from an analysis of 89 prostate cancer lesions was  $20.0 \pm 20.2$  for  $^{18}\text{F}$ -rhPSMA-7 and  $32.5 \pm 42.7$  for  $^{18}\text{F}$ -rhPSMA-7.3 ( $p < 0.001$ ).
- In an oral presentation, “*PSMA-targeted  $^{18}\text{F}$ -labeled Radiohybrid Inhibitors: Labeling chemistry and automated GMP production of  $^{18}\text{F}$ -rhPSMA-7*,” Daniel Di Carlo of TUM presented results on chemical labeling of radiohybrid radiopharmaceuticals, using  $^{18}\text{F}$ -rhPSMA-7 as the example compound. The labeling results were then used to establish rapid, fully automated, large-scale production of the compound in a clinical GMP environment.
- Alexander Wurzer of TUM presented in an oral presentation, “*PSMA-targeted  $^{18}\text{F}$ -labeled Radiohybrid Inhibitors: Concept, preclinical evaluation and first proof of concept study in men*,”

which described preclinical evaluation of  $^{18}\text{F}$ -rhPSMA-7 and results of clinical proof-of-concept imaging, in which the compound demonstrated rapid renal clearance, minimal bladder uptake and enabled high-contrast imaging of lymph nodes and bone metastasis in men with metastatic castration-resistant prostate cancer.

Abstracts from the SNMMI Annual Meeting are published in the *Journal of Nuclear Medicine*:

[http://jnm.snmjournals.org/content/60/supplement\\_1](http://jnm.snmjournals.org/content/60/supplement_1)

### **About rhPSMA**

Blue Earth Diagnostics acquired exclusive, worldwide rights to radiohybrid Prostate Specific Membrane Antigen (PSMA)-targeted technology (rhPSMA) from Scintomics in 2018. rhPSMA originated from the Chair of Pharmaceutical Radiochemistry at the Technical University of Munich, Germany, by Alexander Wurzer and Hans Juergen Wester, and has been utilized clinically under German legislation at the Department of Nuclear Medicine for the diagnostic imaging of men with both primary and recurrent prostate cancer.  $^{18}\text{F}$ -rhPSMA consists of a prostate-specific membrane antigen (PSMA) receptor ligand, which attaches to and is internalized by prostate cancer cells, and is labeled with the  $^{18}\text{F}$  radioisotope for PET imaging.  $^{18}\text{F}$ -rhPSMA has not received regulatory approval.

NOTE: Axumin<sup>®</sup> (fluciclovine F 18) injection is FDA-approved for positron emission tomography (PET) imaging in men with suspected prostate cancer recurrence based on elevated blood prostate specific antigen (PSA) levels following prior treatment. Presentations about  $^{18}\text{F}$ -rhPSMA-7 discuss experiences with an investigational agent for which the safety and efficacy have not been established by the FDA.

This press release is intended to provide information about Blue Earth Diagnostics' business in the United States and Europe. Please be aware that the approval status and product label for Axumin varies by country worldwide. For EU Axumin product information refer to:

[http://www.ema.europa.eu/ema/index.jsp?curl=pages/medicines/human/medicines/004197/human\\_med\\_002100.jsp&mid=WC0b01ac058001d124](http://www.ema.europa.eu/ema/index.jsp?curl=pages/medicines/human/medicines/004197/human_med_002100.jsp&mid=WC0b01ac058001d124).

### **U.S. Indication and Important Safety Information About Axumin**

#### **INDICATION**

Axumin<sup>®</sup> (fluciclovine F 18) injection is indicated for positron emission tomography (PET) imaging in men with suspected prostate cancer recurrence based on elevated blood prostate specific antigen (PSA) levels following prior treatment.

#### **IMPORTANT SAFETY INFORMATION**

- Image interpretation errors can occur with Axumin PET imaging. A negative image does not rule out recurrent prostate cancer and a positive image does not confirm its presence. The performance of Axumin seems to be affected by PSA levels. Axumin uptake may occur with other cancers and benign prostatic hypertrophy in primary prostate cancer. Clinical correlation, which may include histopathological evaluation, is recommended.
- Hypersensitivity reactions, including anaphylaxis, may occur in patients who receive Axumin. Emergency resuscitation equipment and personnel should be immediately available.
- Axumin use contributes to a patient's overall long-term cumulative radiation exposure, which is associated with an increased risk of cancer. Safe handling practices should be used to minimize radiation exposure to the patient and health care providers.

- Adverse reactions were reported in  $\leq 1\%$  of subjects during clinical studies with Axumin. The most common adverse reactions were injection site pain, injection site erythema and dysgeusia.

To report suspected adverse reactions to Axumin, call 1-855-AXUMIN1 (1-855-298-6461) or contact FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).

Full U.S. Axumin prescribing information is available at [www.axumin.com](http://www.axumin.com).

#### About Blue Earth Diagnostics

Blue Earth Diagnostics is a leading molecular imaging diagnostics company focused on the development and commercialization of novel PET imaging agents to inform clinical management and guide care for cancer patients in areas of unmet medical need. Formed in 2014, Blue Earth Diagnostics is led by recognized experts in the clinical development and commercialization of innovative nuclear medicine products. The company's first approved and commercially available product is Axumin® (fluciclovine F 18), a novel molecular imaging agent approved in the United States and European Union for use in PET imaging to detect and localize prostate cancer in men with a diagnosis of biochemical recurrence. The company's pipeline includes Prostate Specific Membrane Antigen (PSMA)-targeted radiohybrid ("rh") agents. rhPSMA is a clinical-stage, investigational class of compounds, with potential applications in the management of cancer. Blue Earth Diagnostics is backed by Syncona, a healthcare company listed on the London Stock Exchange (LON: SYNC). For more information, visit: [www.blueearthdiagnostics.com](http://www.blueearthdiagnostics.com).

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