Washington University in St. Louis
Office of Technology Management

PET RADIOTRACERS CAPABLE OF CROSSING THE BLOOD BRAIN BARRIER AND DETECTING REACTIVE OXYGEN SPECIES

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T-020300

T-020300 PET Radiotracers Capable of Crossing the Blood Brain Barrier and Detecting Reactive Oxygen Species

Technology Description

Reactive Oxygen Species (ROS) is known to contribute to the pathogenesis of neuropathological conditions such as Alzheimer's disease and cancer. However, there's a lack of non-invasive methods to measure ROS generation *in vivo*, and no ROS-specific sensors developed to-date can reliably cross the blood brain barrier. Leveraging decades of experience in diagnostic nuclear medicine, investigators at the Washington University have designed novel PET radiotracers that are geared towards this unmet need.

Stage of Research

Created several novel candidates around a core scaffold; validated the lead candidate in animal models using agents that are known to trigger ROS.

Applications

- In vivo imaging of animal models (see mouse and rhesus monkey data above).
- Diagnostic of brain-related pathologies, such as neurodegenerative diseases, neoplasms, and stroke/trauma.

Key Advantages

- Highly sensitive to most ROS such as superoxide and hydroxyl radical. Excellent noise-to-signal ratio.
- Robust and rapid penetration of the BBB after systemic administration, good PK values compared to ^{18}F-FDG.

Patents: Provisional patent application; foreign rights available.

Additional data, including composition of matter, to be provided after confidential disclosure agreement.