Washington University in St. Louis
Office of Technology Management

RADIOTRACERS TO DETECT EARLY PARKINSON'S DISEASE

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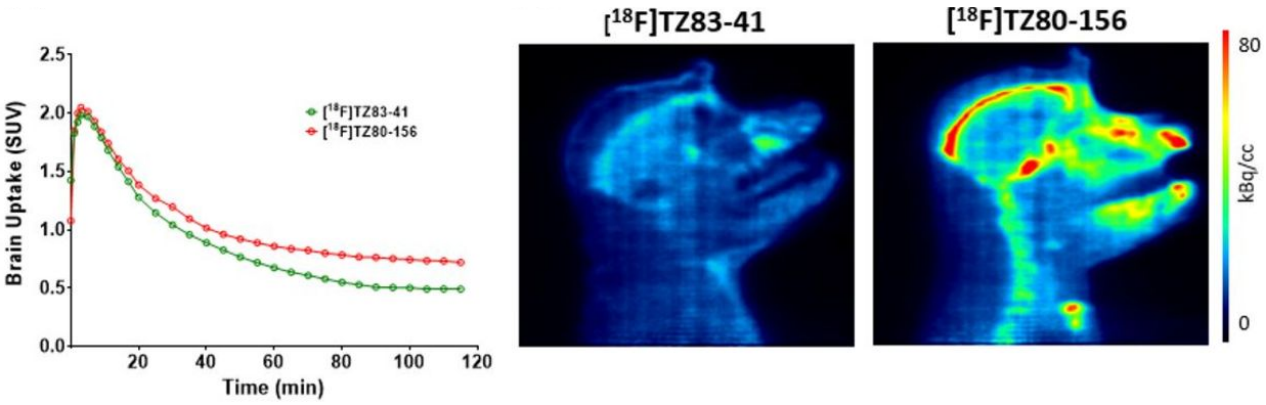
Radiotracers to detect early Parkinson's disease

Technology Description

Researchers at Washington University in St. Louis, led by Dr. Zhude Tu, have developed two imaging agents for α-synuclein (α-syn) aggregation for use to diagnose early Parkinson's disease, track disease progression, and assess efficacy of disease-modifying therapies. Data showed these imaging agents had high brain uptake, suitable brain washout pharmacokinetics, and, more importantly, no presence of lipophilic radio-metabolites in the brain confounding the PET measurement.

The aggregation of misfolded α-syn is a pathological hallmark of Parkinson's disease; however, no reliable imaging biomarker is currently available for α-syn.



Above: PET characterization of radioligands in the macaque brain. Left: Time-activity curve for microPET study in the brain, SUV: standardized uptake value; Right: Representative PET images of two radiotracers in the macaque brain, weighted average of 0-120 min.

Stage of Research

- Proof of concept has been demonstrated *in vivo* with murine and non-human primate models

Publications

- Yanbo Yu, *et al.*, Radiosynthesis and biological evaluation of two ^{18}F-labeled PET radioligands for α-synuclein. JNM, Vol. 64, Issue supplement 1, (2023)

Applications

- Diagnostic for early Parkinson's disease
- Together, these agents with high potency and selectivity for α-syn have great potential to being a therapeutic drug that targets α-syn

Key Advantages

- **Early diagnosis, specific, crosses blood-brain barrier, favorable washout kinetics**

Patents

- **Pending**

Related Web Links

- **Dr. Zhude Tu,** Profile