Radiopharmaceuticals for synaptic imaging

**OCR Number:** OCR 7160

**Description:**

**Fluorine-18 labeled radiopharmaceuticals for SV2A imaging and as biomarkers of synaptic density**

- Many neurological and psychiatric diseases, such as Alzheimer's and Epilepsy, are characterized by misfiring synapses. Currently, there is no way to visualize healthy or aberrant neuronal connections in the living human brain.
- SV2A radioligands combined with positron emission tomography (PET) can be used to noninvasively quantify synaptic density in the living human brain.
- Fluorine-18 labeled SV2A radioligands have a longer half-life (110 min) making them suitable for commercialization and clinical applications.
- This promising method enables routine brain monitoring in patients with neurological diseases, where synaptic loss or dynamic changes in density could provide clues to prognosis.
- **Reference:** Finnema et al. (2016) Science
- **Lead Innovator:** Zhengxin Cai, PhD
- **IP status:** Provisional application pending 62/460,541

*PET evaluation with SV2A radioligand reveals unilateral sclerosis in epilepsy patients.*

(Lef) The white arrows indicate loss of SV2A radioligand binding in the mesial temporal lobe. (Right) Asymmetry indices between left and right hemispheres for healthy control subjects and between ipsilateral and contralateral hemispheres for epilepsy patients. Data are individual subjects.

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