Alzheimer’s Disease Imaging Agents

Emory Tech ID: 05071

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## Opportunity

- Alzheimer’s disease (AD) radio-imaging agent
- 4.5 million Americans have AD, 9 million more with early memory loss
- >$1.5B annual U.S. radiopharmaceutical market
- 45%/yr growth rate in PET radiopharmaceutical
- ≈$1B potential annual market for AD radiopharma
- Diagnosis/disease progression, monitor therapy, drug development
Compounds

- β amyloid accumulation defines AD
- Thioflavin–T derivative (β amyloid dye)
- $^{18}$F labeled for PET imaging
- Bicyclic, heteroaromatic structure
### AD Imaging Agent Design Criteria

- **Binds β-amyloid with target affinity and specificity**
- **Rapid transport across the blood/brain barrier**
- **Compound retained by β-amyloid fibrils but not in normal brain tissue**
- **Provides high contrast images in human subjects**
β Amyloid Binding Assay

AD patient tissue

Normal tissue
no plaques

12/6/2006
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1. Label brain with amyloid imaging agent

2. Determine clearance kinetics and image background levels
Clearance of Imaging Agent in Rhesus Monkey

MicroPET 7M-6-[18F]FIPYRD (4.3 mCi)
In Rhesus AB03 (8.65 Kg)

Time (min)

SUV

Frontal CX
SWCM
Cere

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AD Imaging Agent-Current status

- Early stage human trial at Emory in 2006 - additional refining of lead optimization needed
- Synthesis and binding characteristics of new lead in progress
- Animal studies planned – mouse/primate models
- Follow-on human studies
“Alzheimer's Disease Imaging Agents”

- Worldwide, major market coverage available
- PCT/US06/035316, filed 9/11/06
- Claims cover compositions and methods of use