

# Identifying a biomarker of neuroinflammation for patient stratification in Alzheimer's disease

## AIM

Investigating the relationship between clinical progression of Alzheimer's disease (AD) and microglial activation measured by [18F]-DPA-714 PET imaging

## METHODS

- PET imaging of microglial activation using [18F]-DPA-714, a ligand of 18kDa translocator protein (TSPO) in AD patients and control subjects
- Longitudinal functional and cognitive assessment for 2 years
- Longitudinal microglial activation measurement by PET
- Analysis of the predictive value of microglial activation

## RESULTS

- [18F]-DPA-714 binding is higher in the temporo-parietal cortex of AD patients than in controls (Fig. 1)
- Heterogeneous [18F]-DPA-714 binding progression profiles among patients with AD: slow cognitive decliners show high initial neuroinflammation (blue) whereas fast cognitive decliners show lower initial neuroinflammation (red) (Fig.2)

## CONCLUSION

- [18F]-DPA-714, a marker of microglial activation, useful for AD patient stratification
- [18F]-DPA-714 PET is now used in clinical trials of immuno-modulation

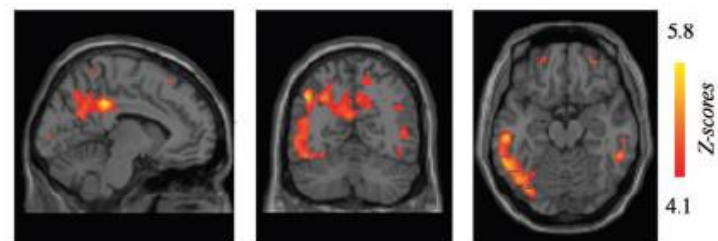


Fig. 1 - Statistical parametric mapping analysis of [18F]-DPA-714 binding between patients with prodromal AD and controls

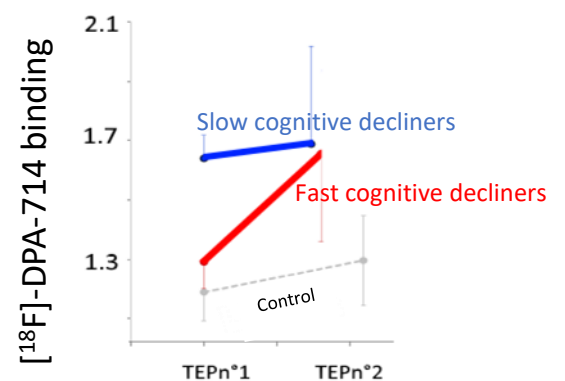
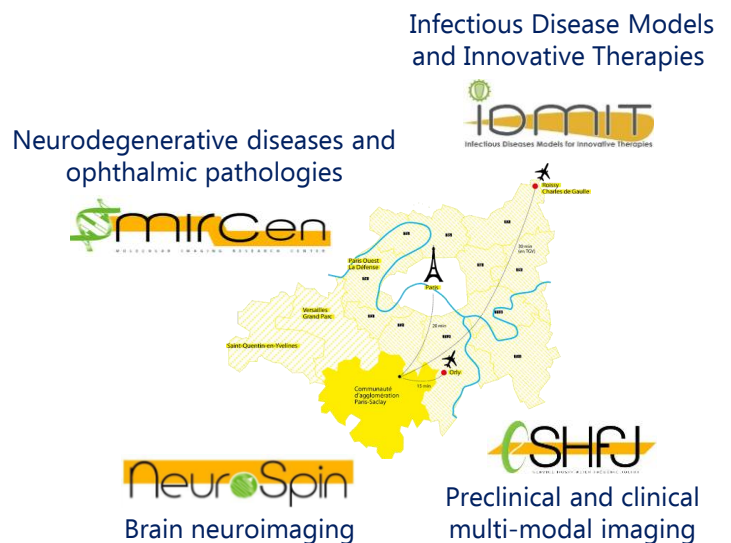


Fig. 2 - Longitudinal change of [18F]-DPA-714 binding in AD patients, demonstrating 2 evolution profiles

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