

Imaging the smoking effects on CNS using PET- [18F]FDG

AIM

Developing a model of smoke exposition in mouse and imaging and quantifying the effect of an anti-smoking therapy

METHODS

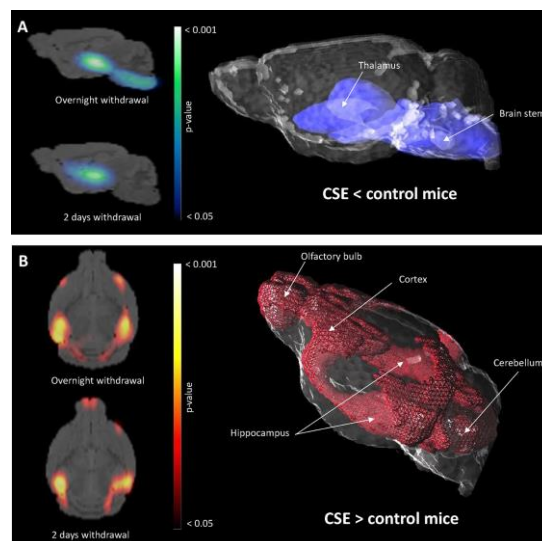
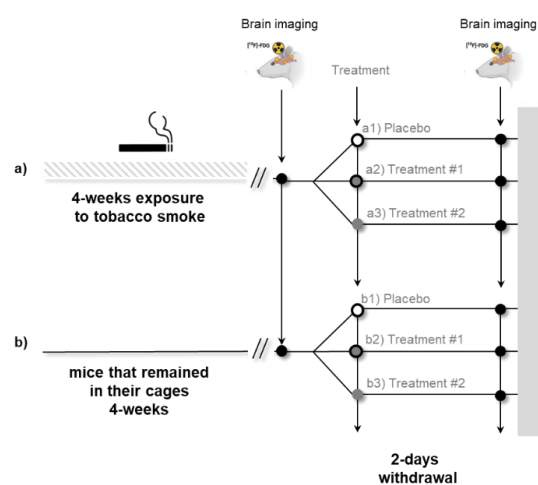
- Exposure to tobacco smoke for 4 weeks under controlled conditions, twice daily, 5 days per week
- Tobacco exposure for 4 weeks & [18F]- FDG-PET brain imaging (glucose metabolism)
- 2 days withdrawal + Treatment (placebo or therapeutics) & [18F]- FDG-PET brain imaging

RESULTS

- A marked decrease in metabolism detected in the thalamus and brain stem of the tobacco-exposed mice
- A glucose metabolism increase in the thalamus and brain stem with treatment compared to the group without treatment

CONCLUSION

- A robust model for exposure to tobacco in mice
- TEP molecular imaging using [18F]-FDG: a relevant biomarker for monitoring the neural substrates of smoking cessation

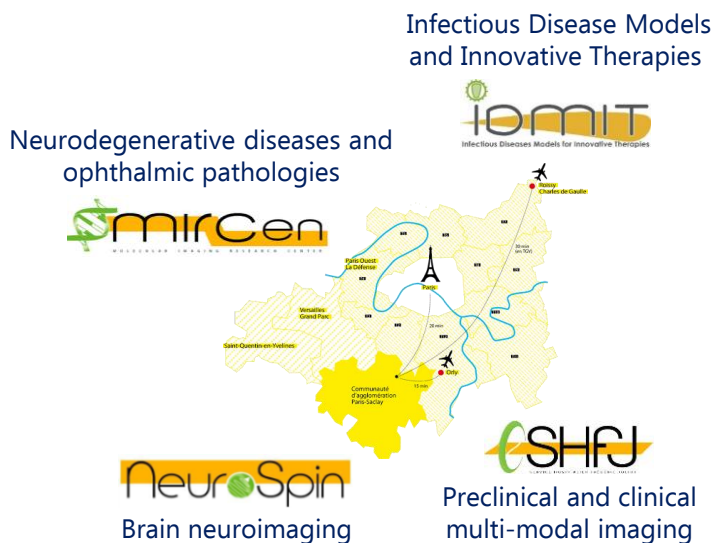


Effects of cigarette smoke exposure (CSE) on brain glucose metabolism. (A) Regions with a significant decrease in metabolic activity in CSE mice. (B) Regions with a significant increase in [18F]FDG uptake in CSE mice.

PASREL-Imagerie: *in vivo* imaging to de-risk your medical innovations

A unique synergy of expertise & technologies to support your innovative projects

- The synergy of four complementary and multidisciplinary centers (IDMIT, MIRCen, SHFJ and NeuroSpin) contributing to major advances in various research fields



From preclinical POC to drug development in patients



PET, MRI, ultrasound, multimodal imaging
and radiopharmaceutical production

- Expertise and state-of-the-art translational *in vivo* imaging platforms:
 - * 4 medical research imaging centers
 - * 34 technological platforms for preclinical and clinical research
 - * 10 research laboratories

- An access to a full range of scientific and technological solutions through one-stop shop and a dedicated project manager to support partner innovative developments from preclinical (rodents and non-human primates) to clinical stages



PASREL
imagerie