

Optimizing immunoPET imaging of tumor PD-L1 expression

AIM

Comparing PET imaging characteristics of three PD-L1 radioligands to monitor responses to anti-PD-1/anti-PD-L1 immunotherapies

METHODS

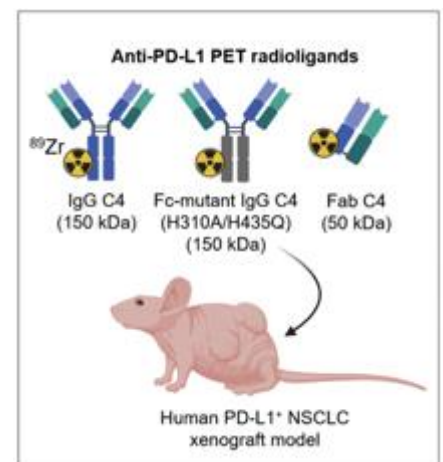
- Nude mice bearing subcutaneous human non-small cell lung cancer (NSCLC) xenografts;
- Labelling of 3 radioligands derived from the anti-PD-L1 IgG1 C4 using ^{89}Zr ;
- Longitudinal PET/CT imaging (pharmacokinetics, biodistribution and dosimetry).

RESULTS

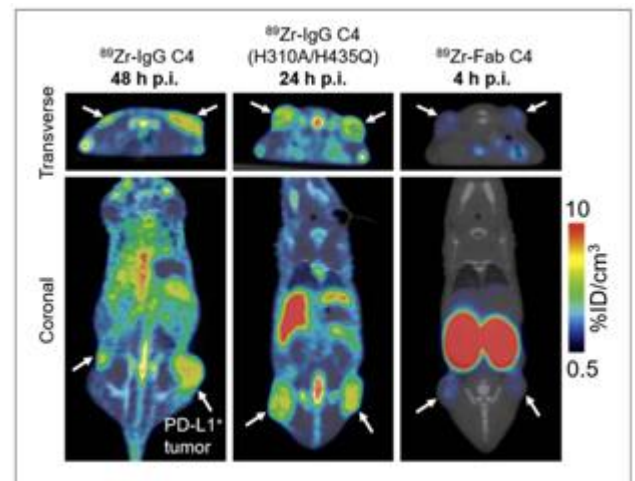
- C4 radioligands substantially accumulated in PD-L1 + tumor;
- Maximal tumor-to-muscle ratios obtained earlier, at 4 h post-injection (p.i.) for [^{89}Zr] Fab C4;
- Absorbed doses tolerable for repeated clinical PET imaging studies

CONCLUSION

- Design of radioligands with shorter PK for PD-L1 immunoPET imaging in a preclinical model
- Promising for further clinical translation of such radioligands



Experimental protocol

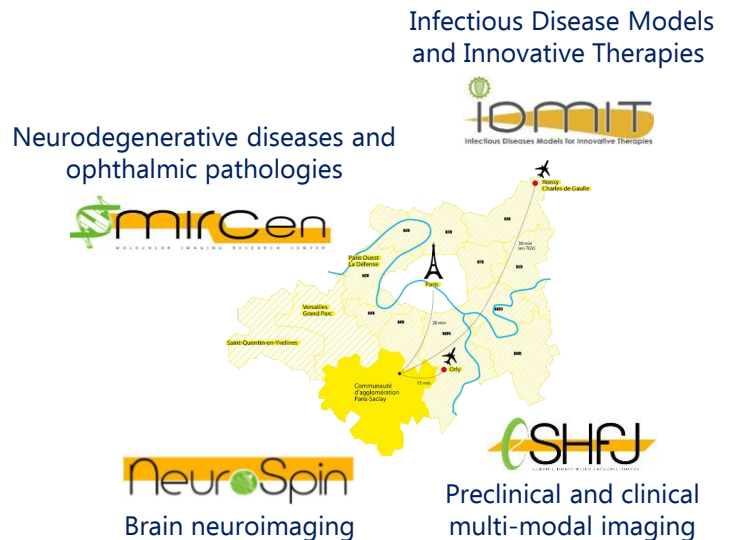


microPET/CT imaging with the C4 radioligands in a PD-L1+ xenograft model - The three C4 radioligands were able to effectively detect PD-L1 expression in H1975 xenografts, but with different tumor uptakes and kinetics

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