

## ***Post-Doctoral Position, Nantes, France***

DogPPK: Absorbed dose assessment in a radioimmunotherapy trial in Dogs with spontaneous cancers by advanced Population Pharmacokinetics analysis and design of optimized sequential SPECT imaging protocols

The U1232 research unit (Team 11: « Oncogénomique intégrative de la genèse et de la progression du myélome multiple ») based at Nantes opens a 12 months postdoctoral position in the fields of pharmacokinetics and bio-statistics, from October 1st 2017. The position is funded by the DogPPK project (ITMO Cancer, Inserm).

### **Scientific context**

Molecular radiotherapy is a therapeutic modality based on the injection of radionuclides coupled to a specific vector. This therapy was demonstrated as efficient in the treatment of hematological cancers and neuroendocrine tumors. Nuclear imaging can be used to follow the distribution of the therapeutic agent. By repeating image acquisitions, it is possible to assess its pharmacokinetics (PK) and derive the absorbed doses delivered to the patient. To do so, classical approaches require numerous data points for all individual subjects. This is often non achievable with suffering patients and adds an important cost to the therapy.

Our project aims at evaluating a solution to reduce the number of images per patient without impairing the accuracy of dosimetry. We think that this can be achieved by extending the population PK (popPK) approach to the analysis of the kinetics of activity distribution in tissues of interest. In such a popPk approach, kinetics from different individuals are considered simultaneously. This improves the accuracy of the identification of the different PK parameters, even when the data sampling is limited. Our objective is to test this approach with our in-house popPk software in a preclinical trial of radioimmunotherapy on dogs with spontaneous cancers.

### **Job description and missions**

The main objective of the project is a validation, on a cohort of dogs, of an original PK/dosimetry protocol based on a popPk approach that could minimize constraints on patients in molecular radiotherapy. The hired postdoc will be in charge, with another post-doctoral researcher, of the population pharmacokinetics analysis (i.e. identification of the covariates, choice of the optimal time-sampling...) and carry out the statistical analysis of the whole method in order to assess its potential relevance in clinical studies.

### **Profile**

We are looking for a candidate with a PhD (or a MsC) in bio-statistics, applied mathematics or computing science, preferentially with skills in compartmental modeling.

Autonomy, open-mindedness and motivation, as well as good English speaking/writing skills are also expected.

### **Contact and additional information**

For application, a folder that contains a CV, a motivation letter as well as letter of recommendation have to be sent, to the following email address:

[loic.campion@ico.unicancer.fr](mailto:loic.campion@ico.unicancer.fr)