

## SPECT/CT quantification and patient dosimetry for <sup>177</sup>Lu-DOTATATE treatment

### Description du sujet de stage :

<sup>177</sup>Lu-DOTATATE is a radiolabeled somatostatin analogue developed for treatment of patients with somatostatin receptor positive neuroendocrine tumours. Being a somatostatin analogue, <sup>177</sup>Lu-DOTATATE is taken up by areas of increased somatostatin receptor density.

At Léon Bérard cancer center, a clinical study proposes a fractionated approach where patients are treated with several therapy cycles with an activity of 7.4 GBq, with a 6 to 10 weeks interval, each time with concomitant infusion of amino-acids to reduce renal uptake. The number of delivering cycles is adjusted according to the maximum prescribed absorbed dose in organs at risk, kidneys and bone marrow in particular.

In this study, we propose to implement a personalized dosimetry for each patient. A multi-time SPECT/CT images will be acquired according to a protocol already designed but for which the acquisition parameters should be optimized. These images will perform to obtain the biodistribution of <sup>177</sup>Lu-DOTATATE then to compute the absorbed dose in tissues. A specific clinical dosimetry software will be use to analyze images and to compute doses.

The main objectives of student internship:

- Optimize SPECT/CT acquisitions
- Implement personalized dosimetry from specific 3D dosimetry software

The student will incorporate a multidisciplinary team composed of physicists, radiologist and nuclear physicians, computer scientists and researchers.

**Rémunération** : 25,20 euros par jours travaillés (~550/mois)

**Lieu du stage** : Centre Léon-Bérard, 28 rue Laënnec, 69373 LYON, cedex 08

**Perspectives - Possibilité de poursuivre en thèse** : possible (financement demandé)

### Responsables du stage :

Nom	Prénom	adresse	Tel	Courriel
BADEL	Jean-Noël	Centre Léon-Bérard, 28 rue Laënnec, 69373 Lyon, cedex 08	04 26 55 67 19	<a href="mailto:jeannoel.badel@lyon.unicancer.fr">jeannoel.badel@lyon.unicancer.fr</a>
SARRUT	David	Centre Léon-Bérard, 28 rue Laënnec, 69373 Lyon, cedex 08	04 78 78 51 51	<a href="mailto:David.Sarrut@creatis.insa-lyon.fr">David.Sarrut@creatis.insa-lyon.fr</a>

