

## Faculty of Medicine



RPR2330

## Utilisation des radioisotopes et des molécules marquées en biologie

[15h+15h exercices]

**Teacher(s):** Bernard Gallez, Max Lonneux  
**Language:** French  
**Level:** Second cycle

**Aims**

Answer to three fundamental questions : why and how to use a radioactive isotope, and how to prepare it ?

**Main themes**

Introduction to the use of radioisotopes : tracer, applications in vitro (pharmacology, RIA) and in vivo (with comparison to other imaging modalities)

Preparation of radiolabelled molecules : nuclear reactions (neutron activation, charged particles, fission, generators), radiochemistry

Two examples illustrated from the nuclear reaction, radiochemistry, pharmaceutical conditioning, quality controls, and use in nuclear medicine (+ comparison/integration of other modalities for the diagnosis assessment) :

-  $^{99m}\text{Tc}$  generator, diphosphonate kits for the use in bone scintigraphy

-  $^{18}\text{F}$ -fluorodeoxyglucose and applications in PET oncology

**Other credits in programs**

<b>ESP31DS/RP</b>	Première année du diplôme d'études spécialisées en santé publique (Physique d'hôpital)	Mandatory
<b>ESP3DS/TI</b>	Diplôme d'études spécialisées en santé publique (santé au travail - toxicologie industrielle)	
<b>RPR9CE/R</b>	Certificat universitaire en radioprotection et en application des rayonnements ionisants (Radiopharmacie)	Mandatory