

APPEL A PROPOSITIONS 2016 DU CANCEROPOLE DU GRAND-EST
« EMERGENCE STRUCTURANTE »

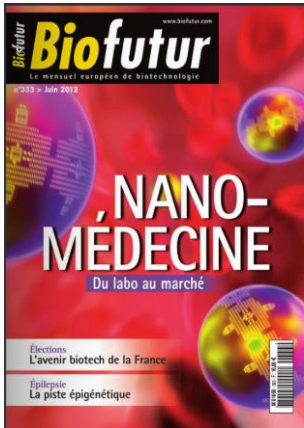
E-NANORX

NANOPARTICULES MULTIMODALES EXCITABLES PAR RAYONS X

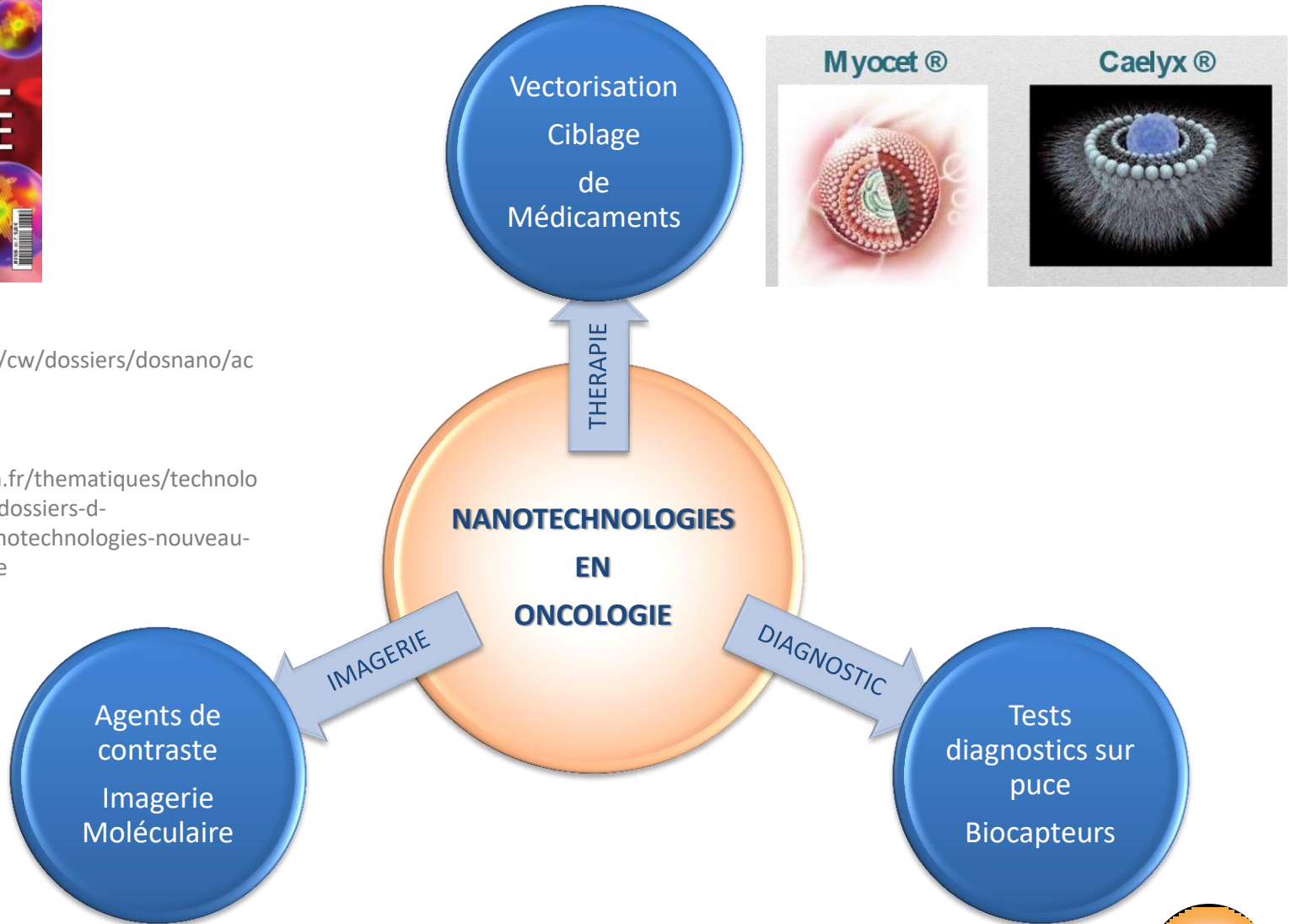
De la conception à la validation préclinique

Coordination du projet : **Sophie PINEL, MCF**
sophie.pinel@univ-lorraine.fr

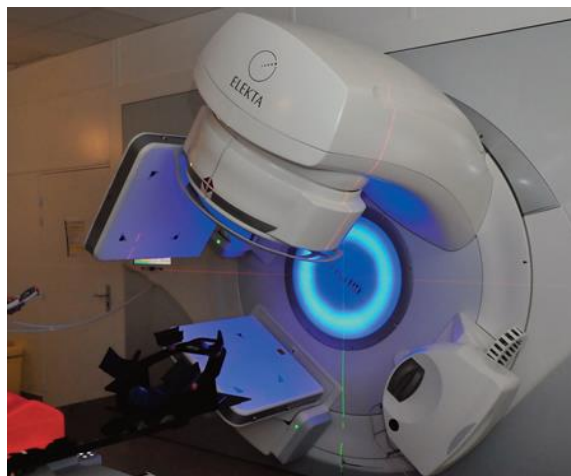
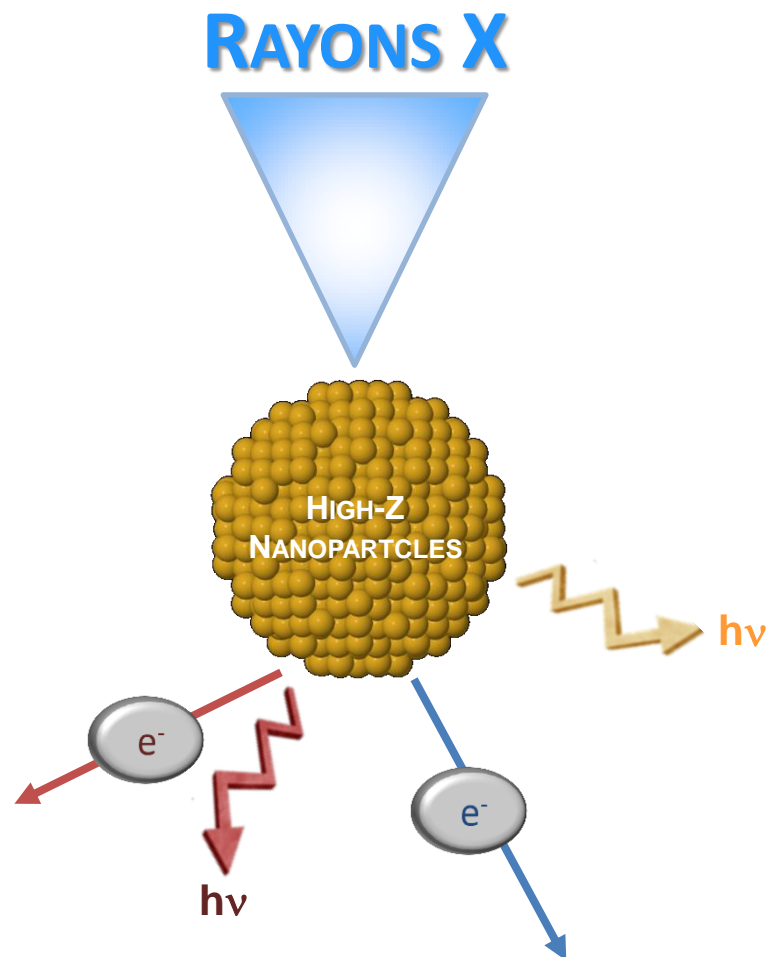
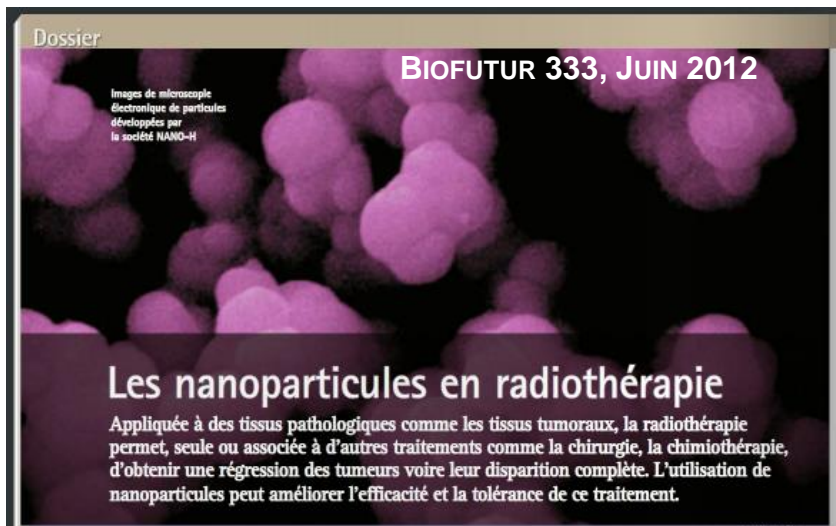
CONTEXTES CLINIQUE & SCIENTIFIQUE



- **CNRS**
<http://www.cnrs.fr/cw/dossiers/dosnano/accueil.htm>
- **INSERM**
<http://www.inserm.fr/thematiques/technologies-pour-la-sante/dossiers-d-information/les-nanotechnologies-nouveau-pan-de-la-medecine>

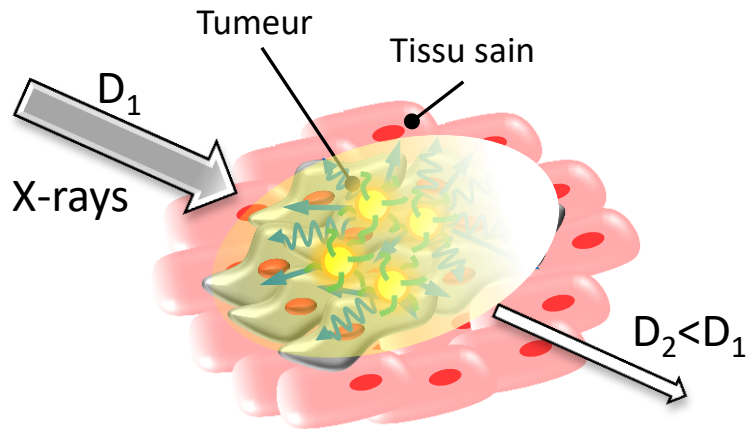


CONTEXTES CLINIQUE & SCIENTIFIQUE



Radiothérapie conventionnelle

CONTEXTES CLINIQUE & SCIENTIFIQUE



Différence d'absorption des photons X
entre tissu tumoral et tissu adjacent sain

Accumulation préférentielle des nanoparticules
dans le tissu tumoral pour :

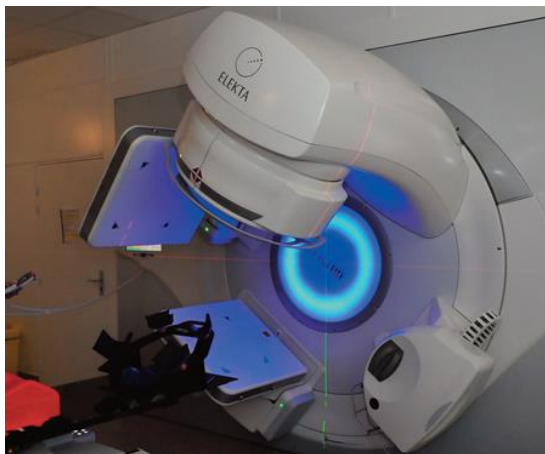
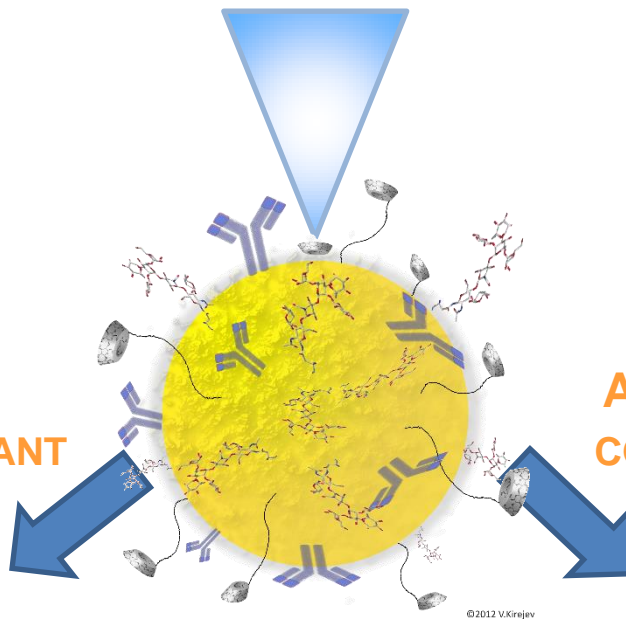
- ▶ Augmenter la densité du tissu cible
- ▶ Favoriser les interactions photons X et tissus
- ▶ Multiplier les espèces secondaires produites
- ▶ Amplifier les dommages cellulaires et tissulaires

CONTEXTES CLINIQUE & SCIENTIFIQUE

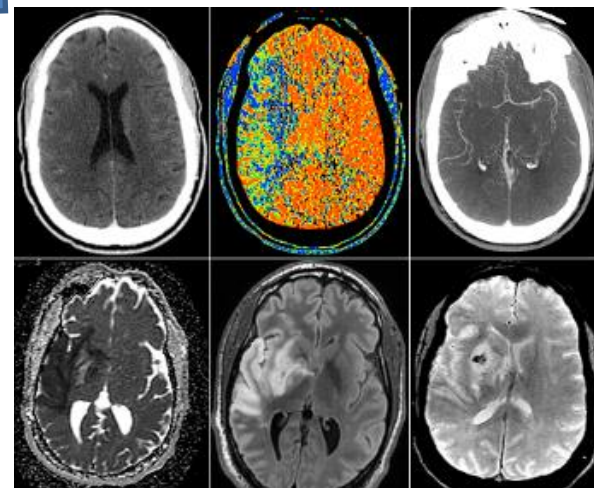
RAYONS X

AGENT
RADIOSENSIBILISANT

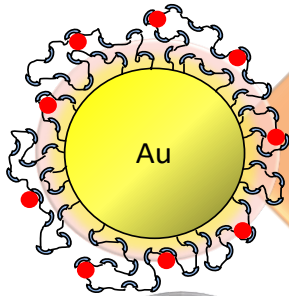
AGENT DE
CONTRASTE



THERAPIE GUIDEE
PAR IMAGERIE



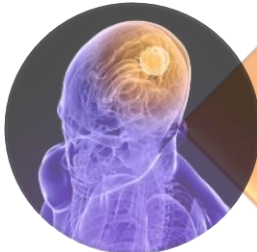
LES CONTOURS DU PROJET E-NANORX



NANOPARTICULES MULTIMODALES
(Nanoparticules hybrides et Z élevé)



RAYONNEMENTS X
(Imagerie & Thérapie)

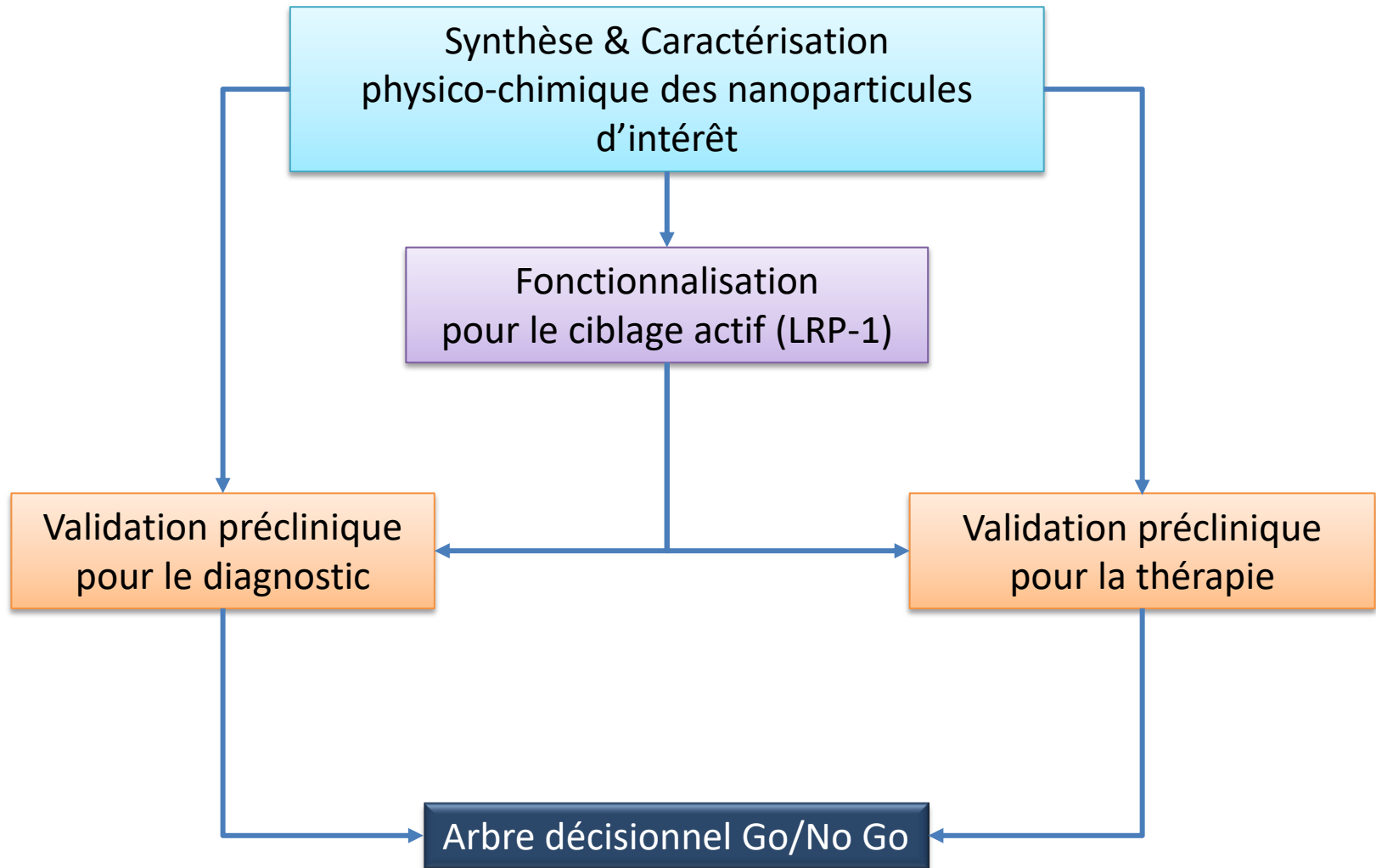


TUMEURS DU SNC
(Gliomes de haut grade & Métastases
cérébrales)



**MODÉLISATION &
SIMULATION NUMÉRIQUES**

LES TÂCHES DU PROJET E-NANORX



LES PARTENAIRES DU PROJET E-NANORX

MEDyC UMR CNRS 7369



UNIVERSITÉ
DE REIMS
CHAMPAGNE-ARDENNE



UNIVERSITÉ
DE LORRAINE



LABORATOIRE
RÉACTIONS
ET GÉNIE
DES PROCÉDÉS



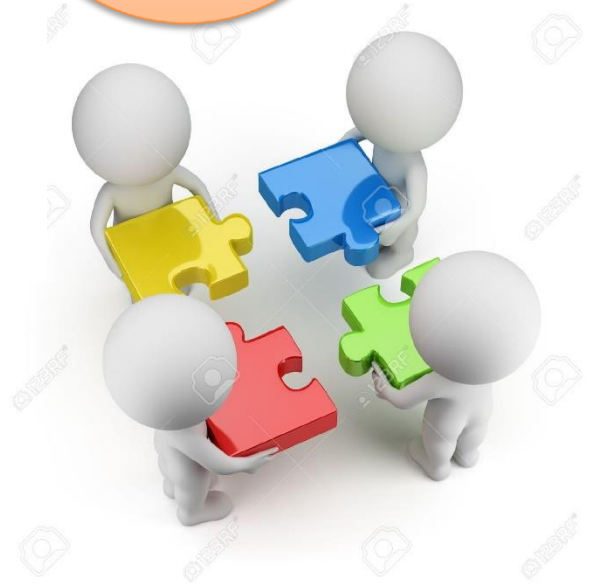
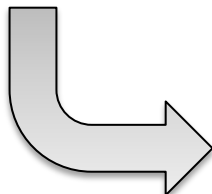
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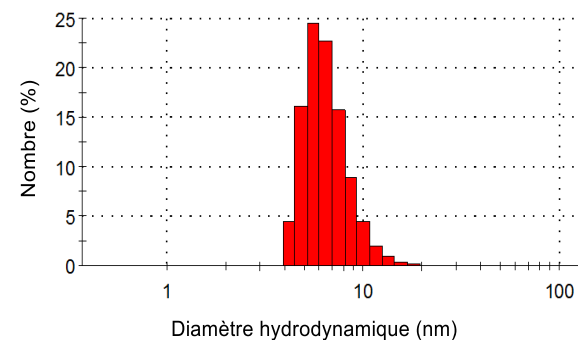
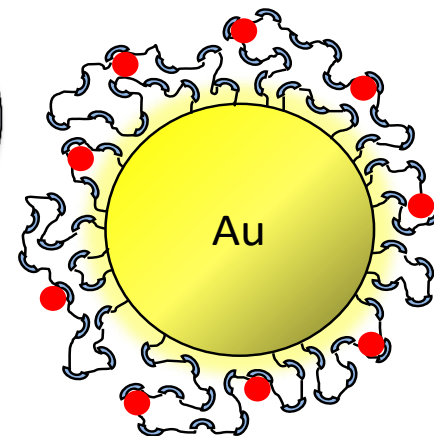
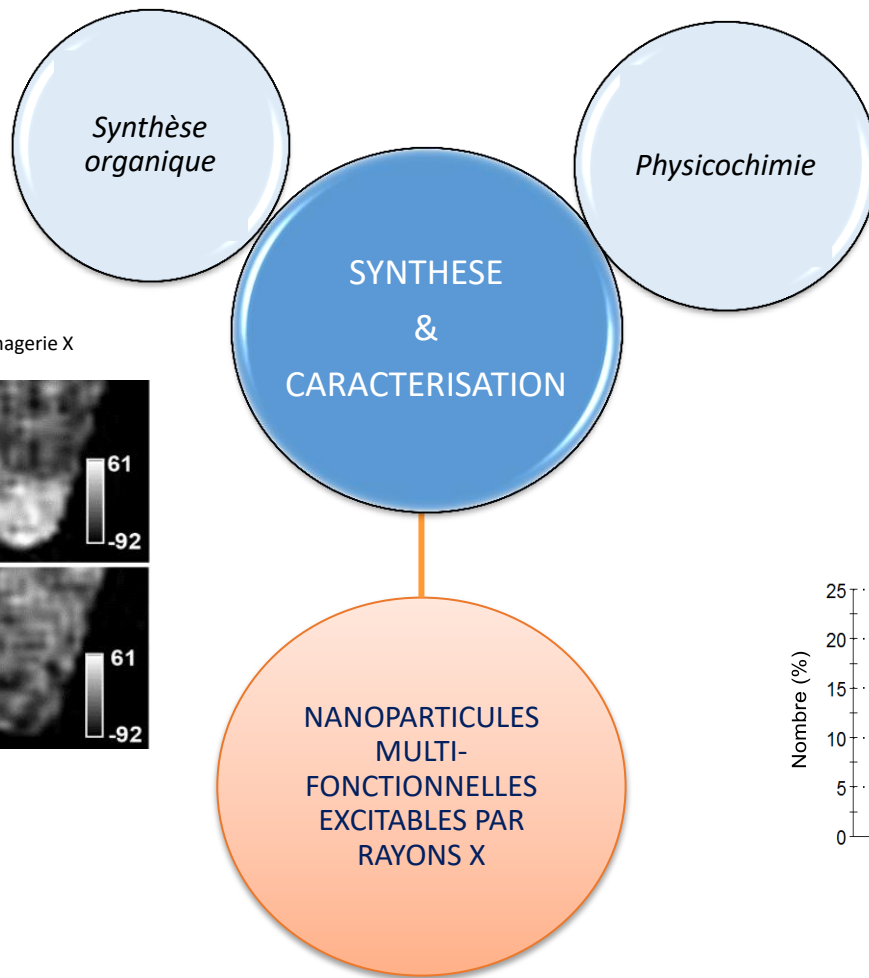
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UTINAM



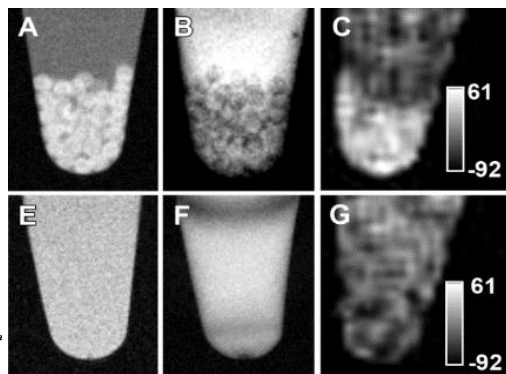
UNIVERSITÉ DE FRANCHE-COMTE



EXPERTISES, SAVOIR-FAIRE & ENJEUX



IRM T1 IRM T2* Imagerie X

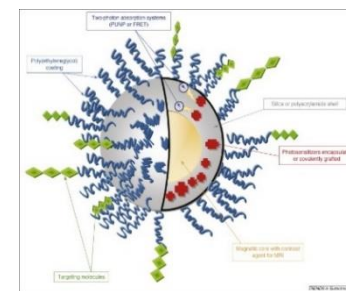
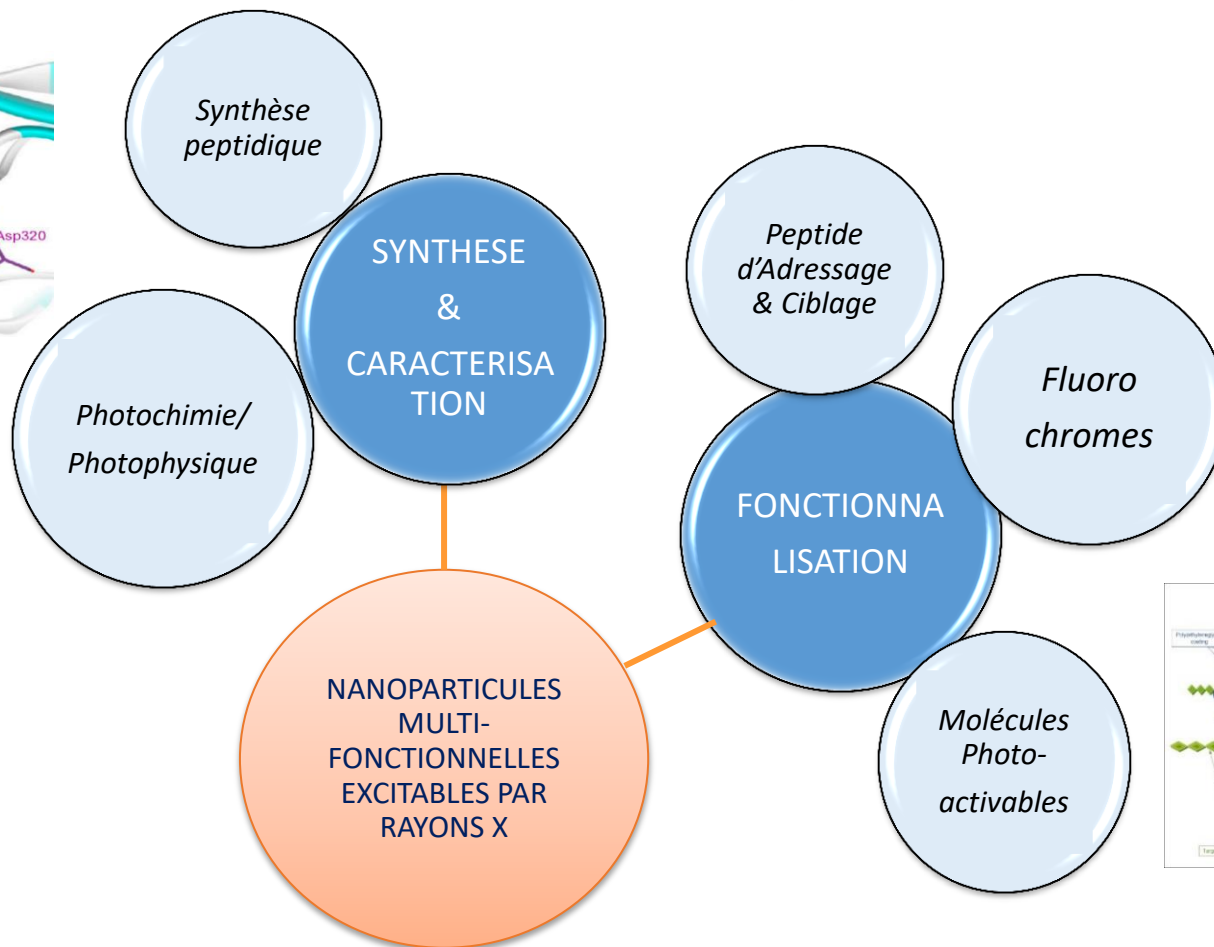
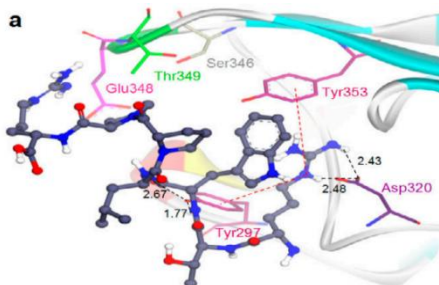


PR STEPHANE ROUX



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EXPERTISES, SAVOIR-FAIRE & ENJEUX



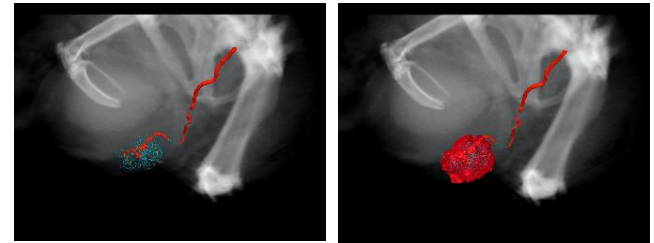
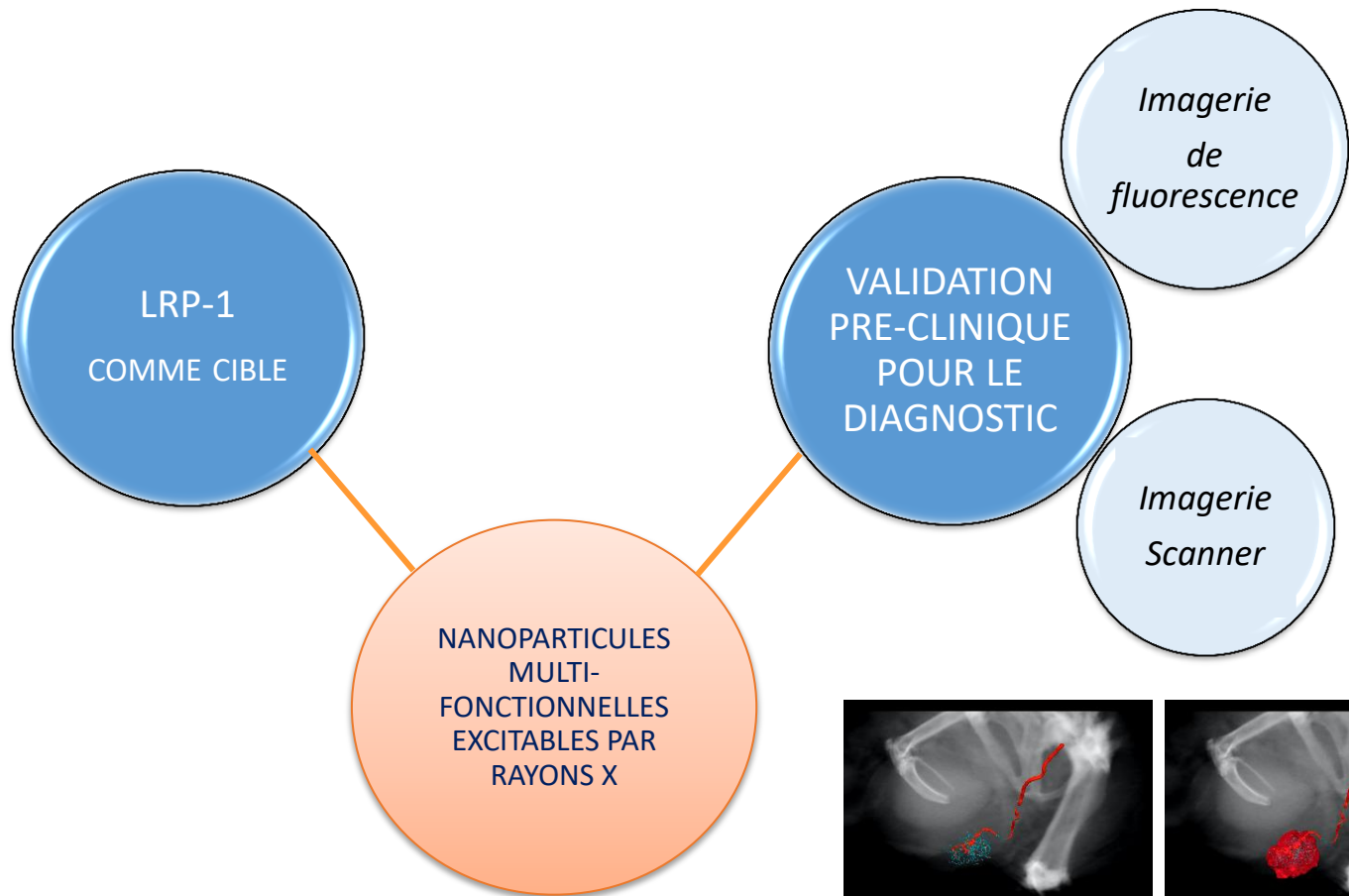
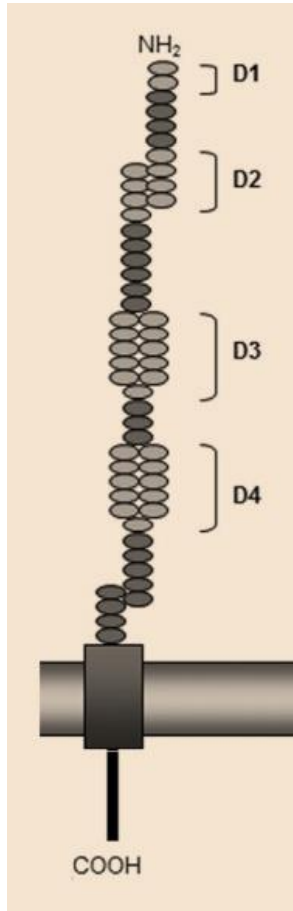
DR CÉLINE FROCHOT



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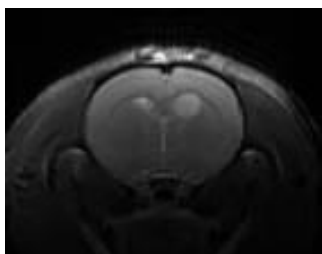
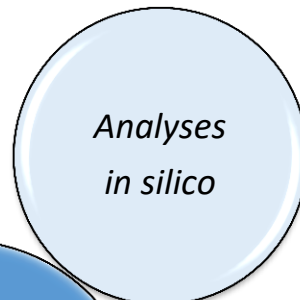
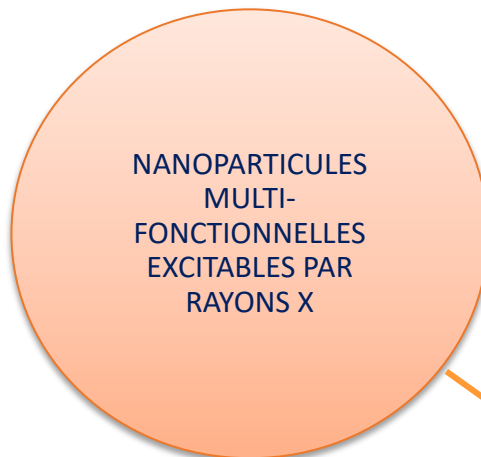
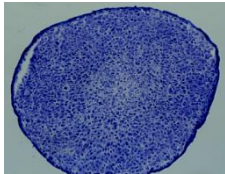
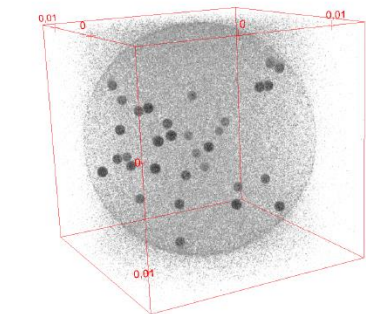
PR JÉRÔME DEVY

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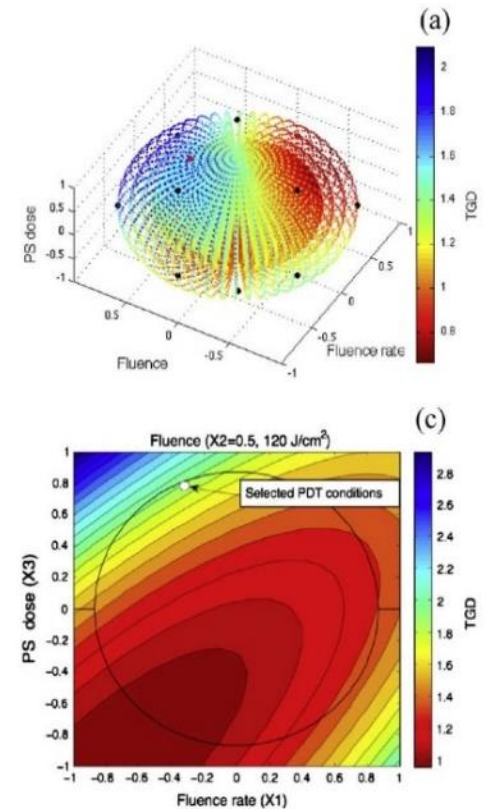
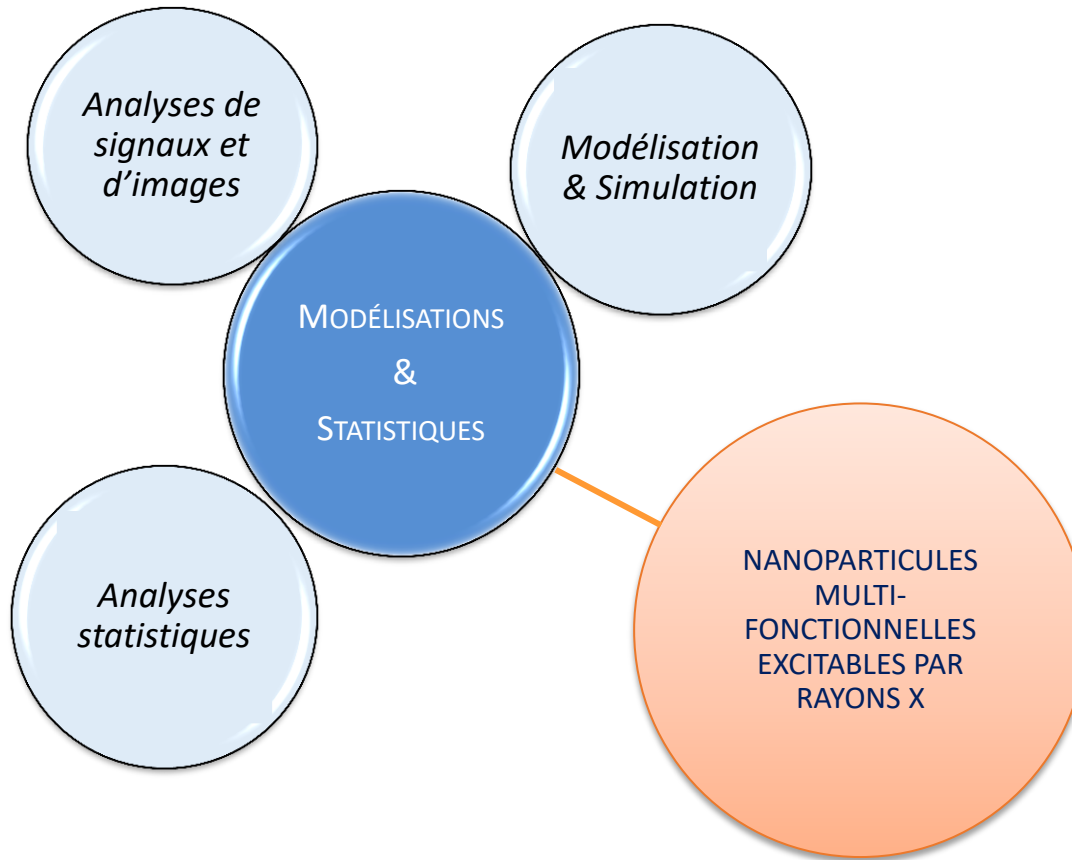


DR SOPHIE PINEL



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3. Retif P, Reinhard A, Paquot H, Jouan-Hureau V, Chateau A, Sancey L, Barberi-Heyob M, Pinel S, Bastogne T. Monte Carlo simulations guided by imaging to predict the in vitro ranking of radiosensitizing nanoparticles. *Int J Nanomedicine*, en revision, **2016**.

EXPERTISES, SAVOIR-FAIRE & ENJEUX

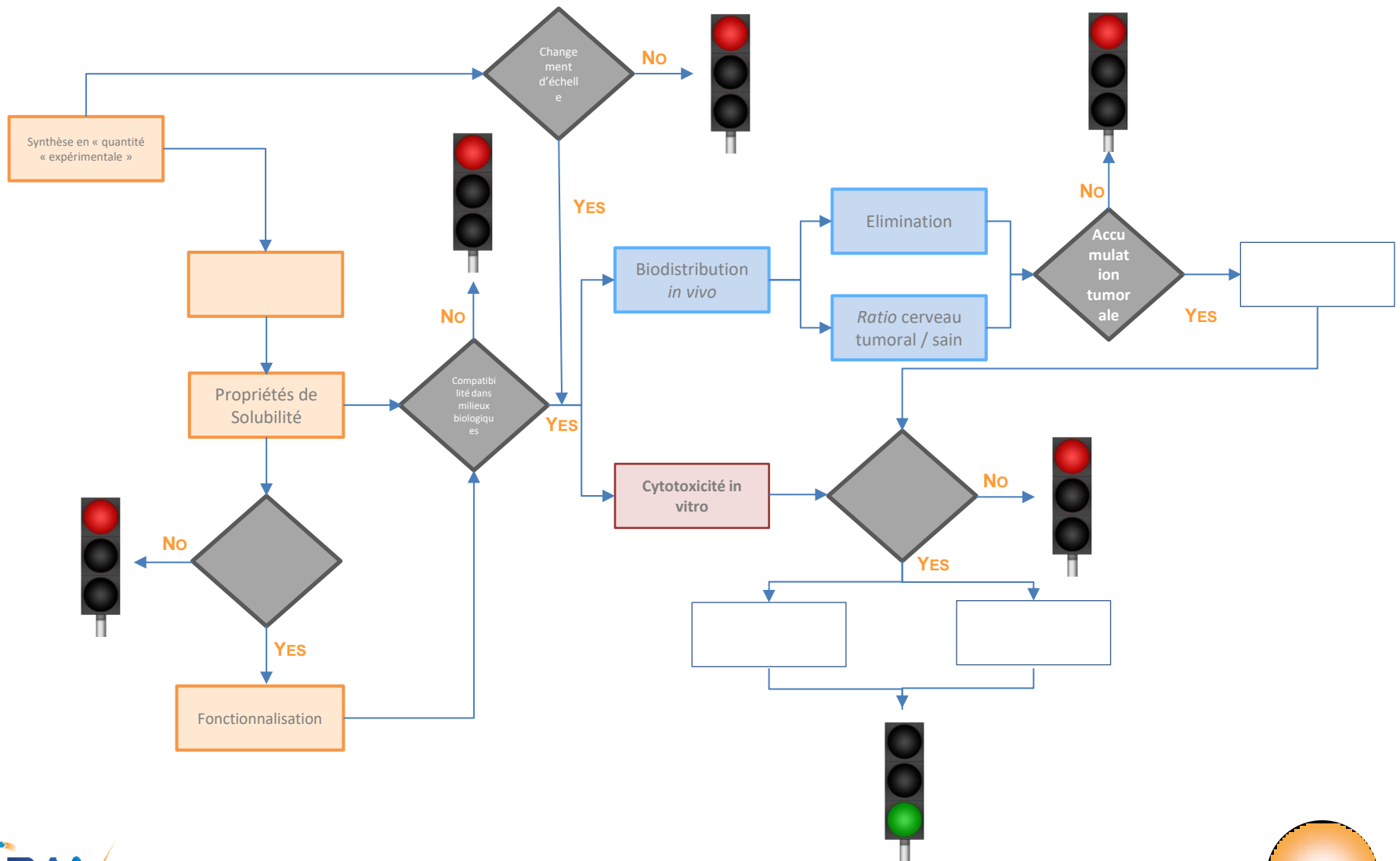


PR THIERRY BASTOGNE

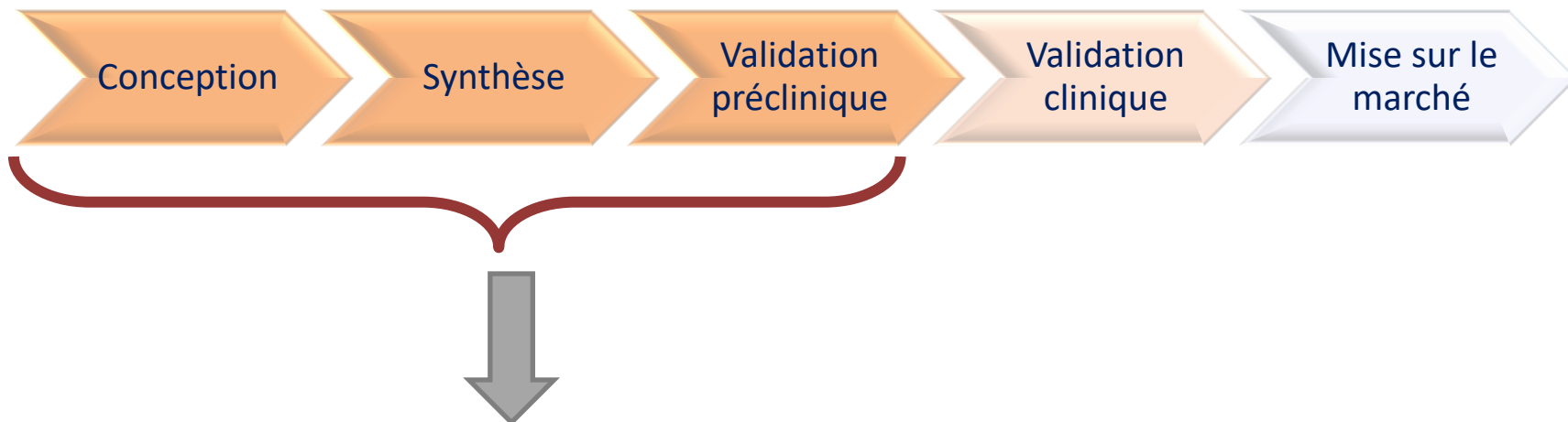


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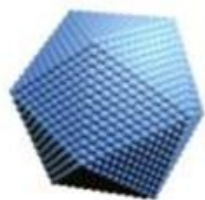
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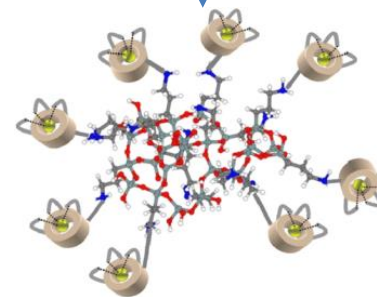
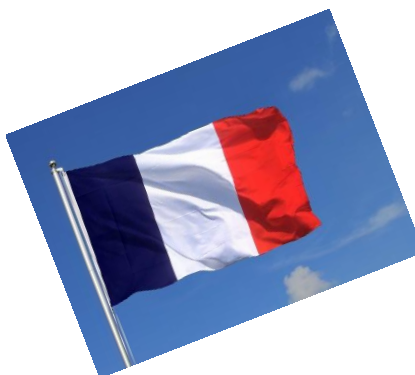
1661

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(Z=72)
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6 Essais cliniques – différents cancers



Gadolinium
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NH TherAguix™

Essai clinique phase 1 – métastases cérébrales

Merci pour votre attention

