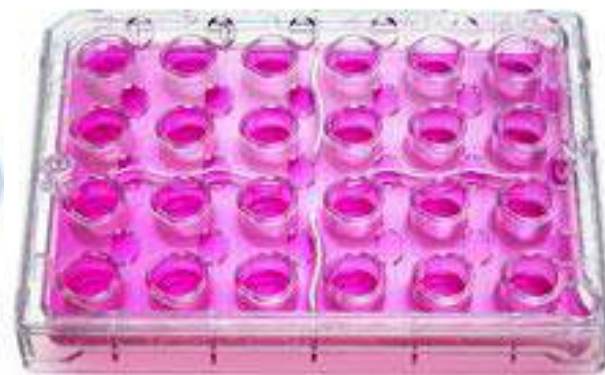
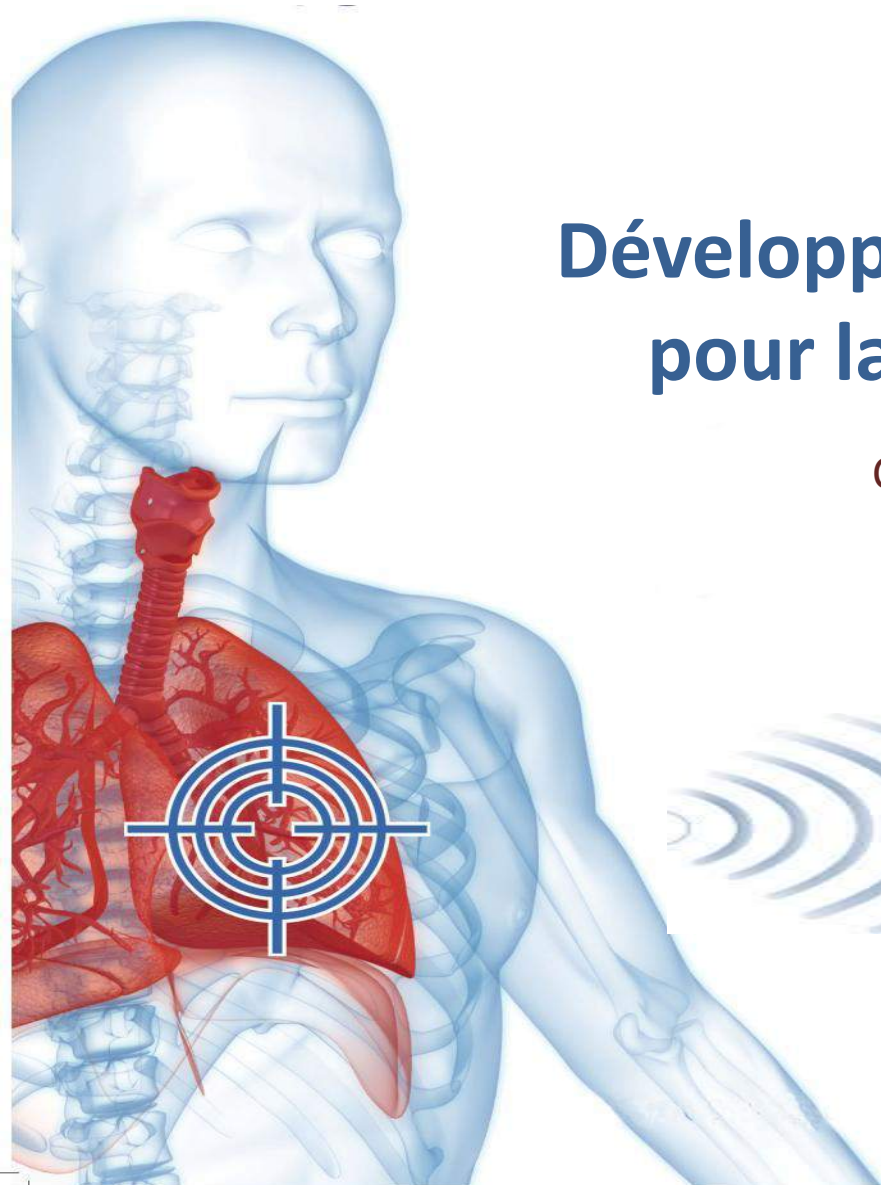


Développement de modèles *in vitro* pour la recherche sur le cancer

Christophe.mas@oncotheis.com

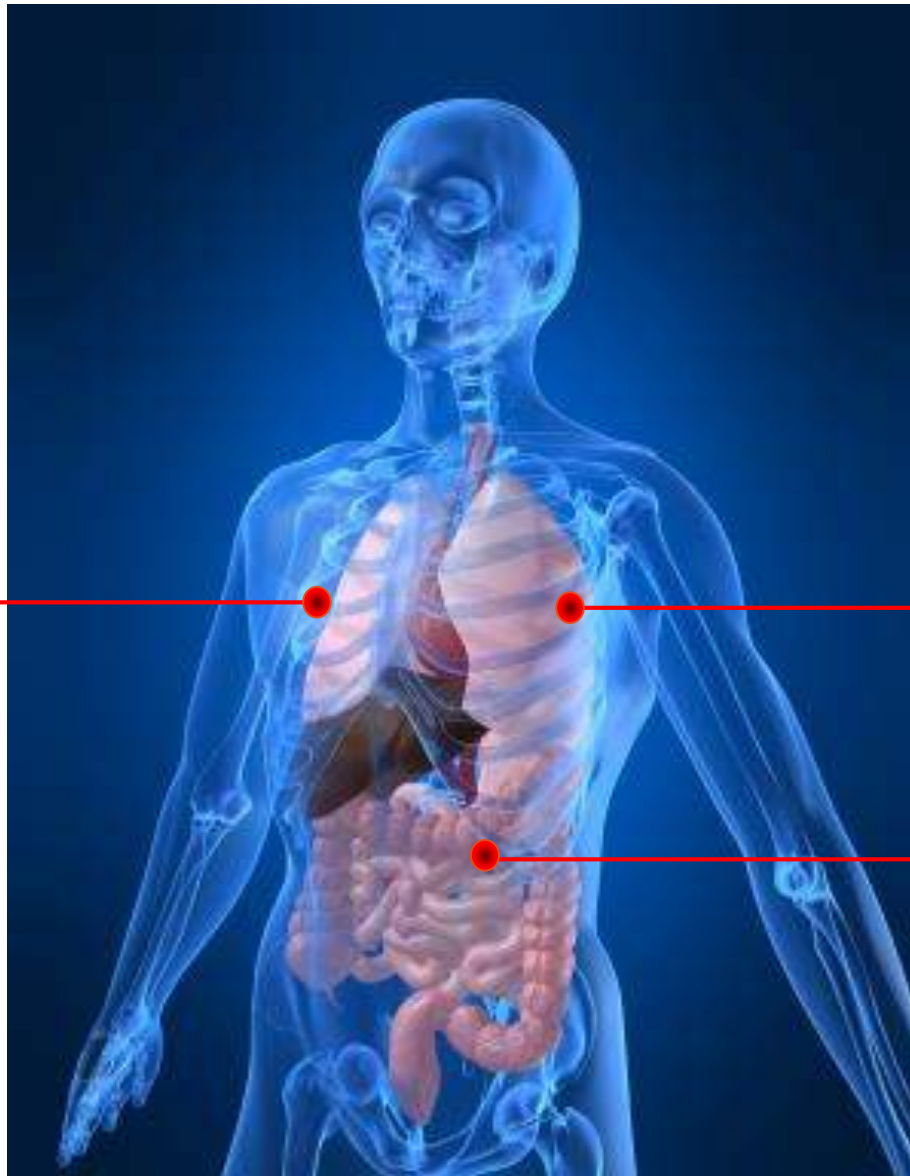




www.oncotheis.com

Cibles thérapeutiques

**Cancer de
la Plèvre**



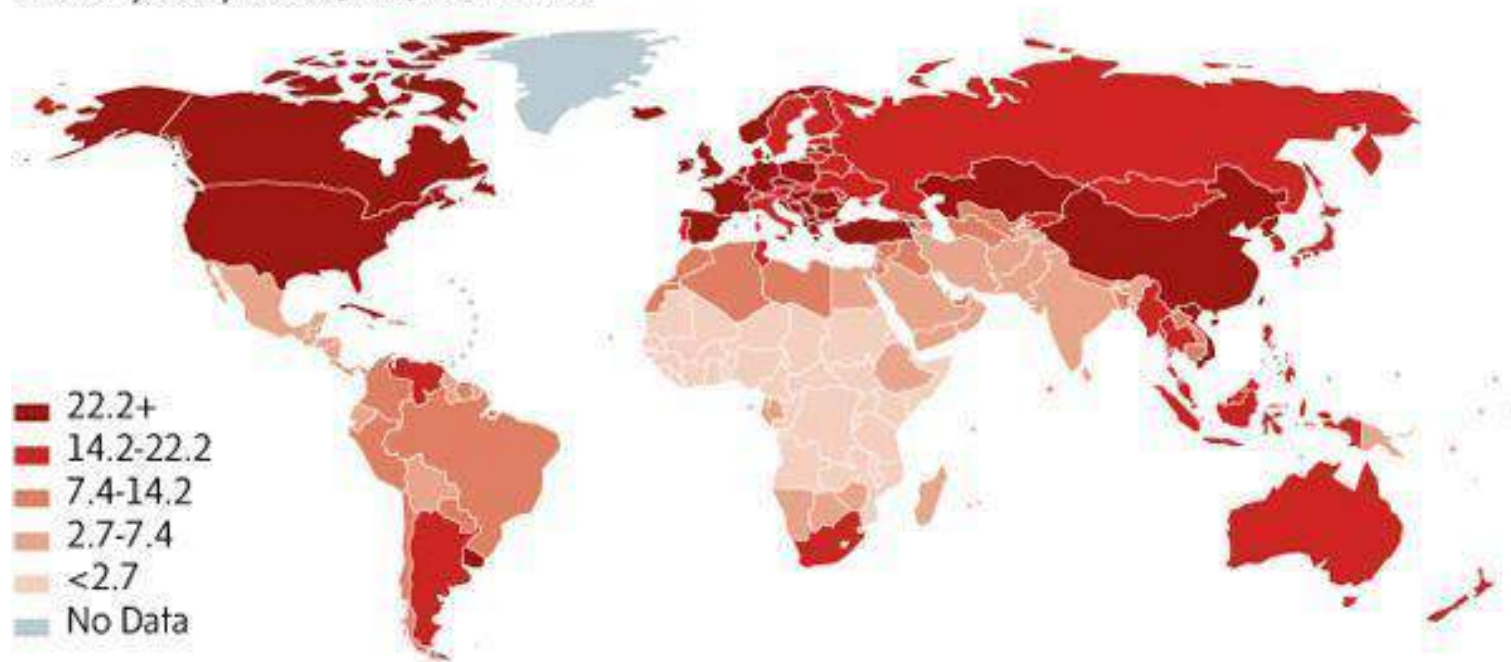
**Cancer du
Poumon**

**Cancer du
Colon**

La principale cause de décès par cancer

LUNG CANCER

Mortality rate per 100,000, both sexes



1ere ligne

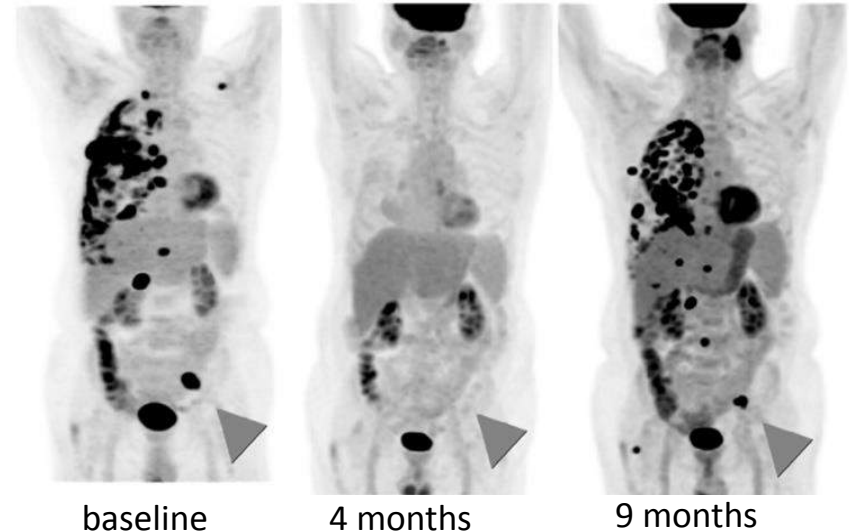
Chimiothérapies	
► cisplatine	DNA replication
► pemetrexed	
► paclitaxel	
► docetaxel	

2eme ligne

Thérapies ciblées		
► erlotinib ► gefitinib ► afatinib	EGFR-TK	12-14 7.7-12.9 13.6
► crizotinib ► ceritinib	ALK, ROS1 MET	9.7 7
► ramacicumab ► bevacizumab	VEGFR	7.8 6.2

Constant et al. InTech 2015; 83-103.

pemetrexed + bevacizumab (PET scan)



Problème de recurrence



Plus d'un million de morts !

10,000 molécules

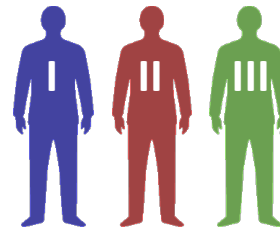
**Recherche
sur le Cancer**

1 200 000

Etudes
Pré-cliniques



Essais Cliniques



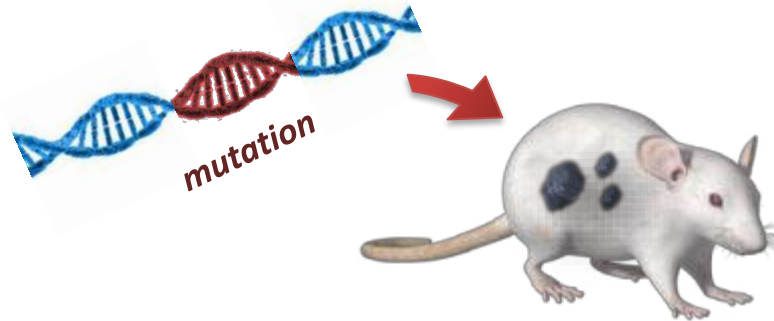
~ 60 millions de dollars
Taux d'échec >95%

1 traitement

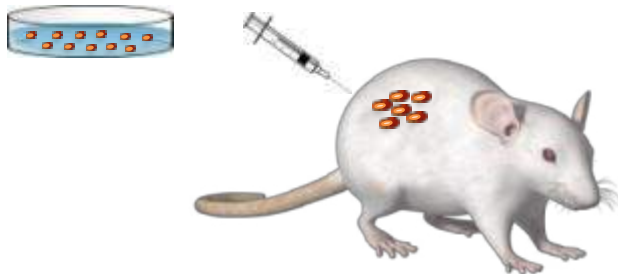


Les modèles animaux

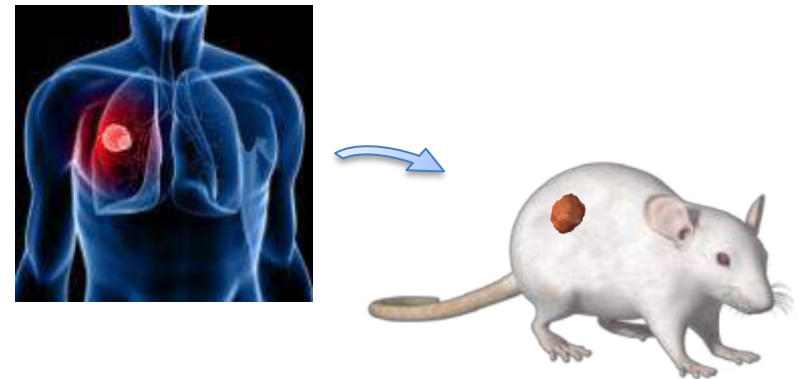
Souris génétiquement modifiées



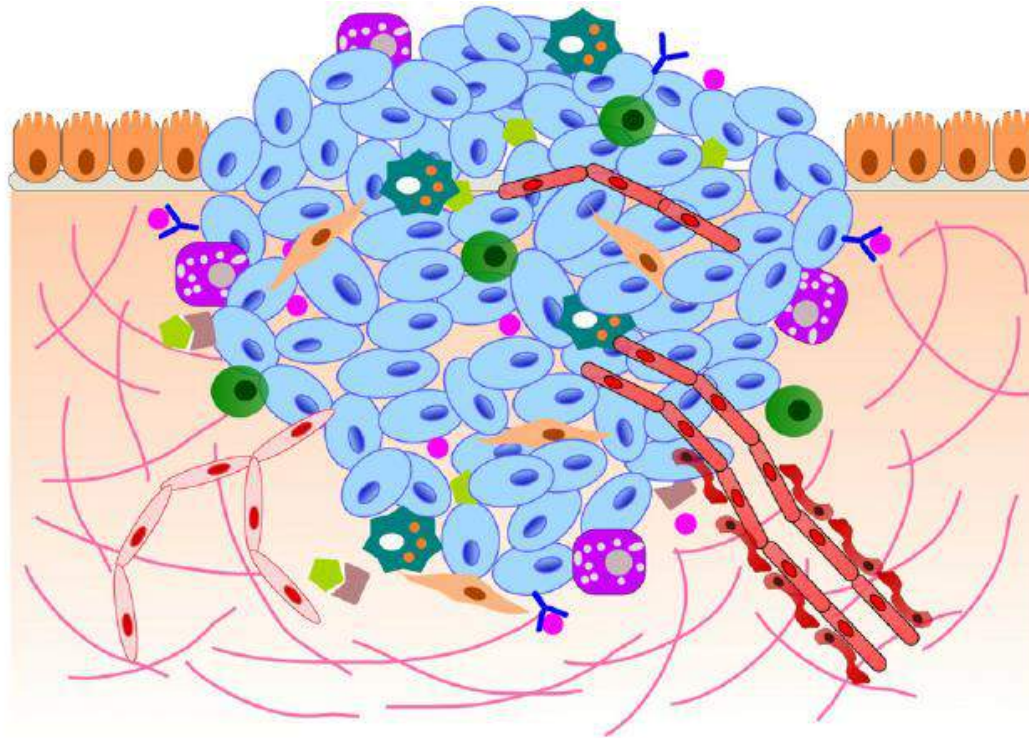
Xénogreffe de cellules tumorales



Xénogreffe de tumeurs de patients



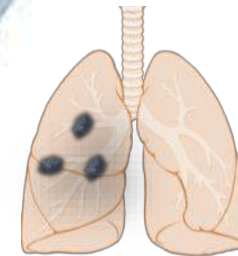
Complexité du microenvironnement



10,000 molécules

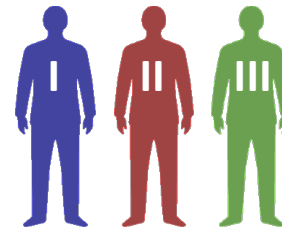
**Recherche
sur le Cancer**

Etudes
Pré-cliniques



Cancer humain *in vitro*

Essais Cliniques



1 traitement



Un nouveau modèle de cancer du poumon

- **100% humain**
- ***in vitro***
- **3-Dimensionnel**
- **facile à utiliser**



Plaque de culture avec milieu nutritif
stocké @37°C

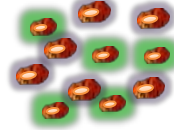
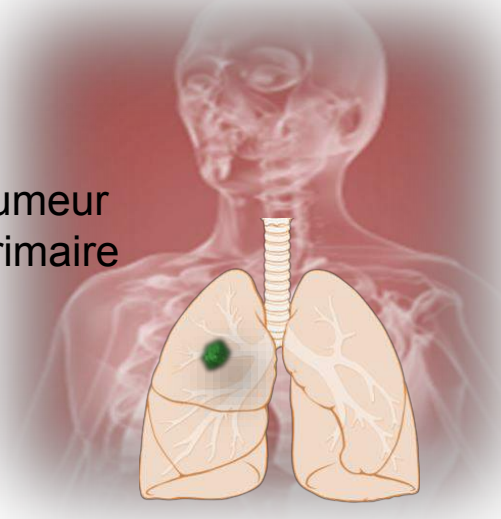
cellules bronchiques
humaines

cellules tumorales
humaines



lignée tumorale

tumeur
primaire

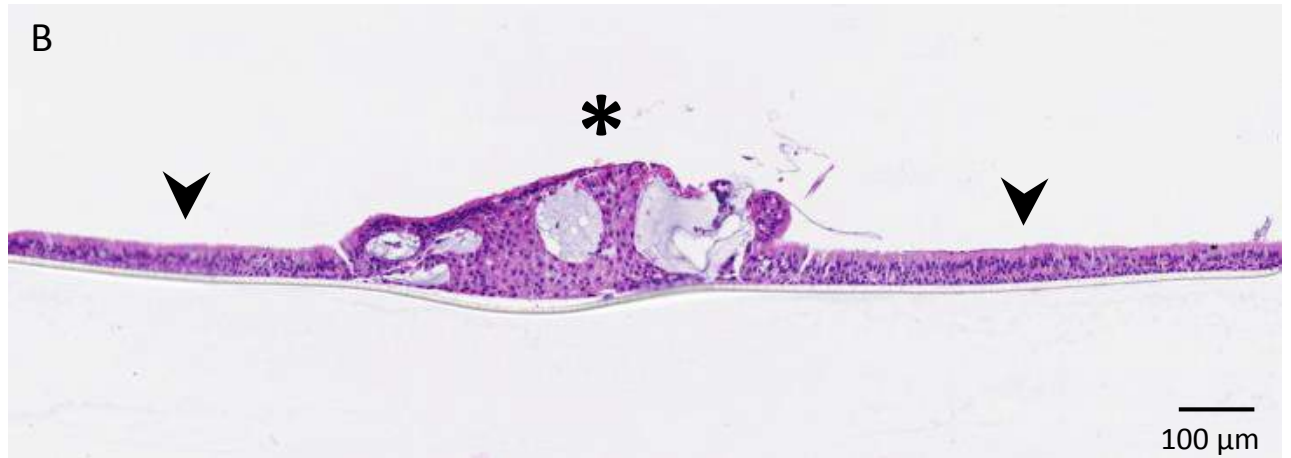
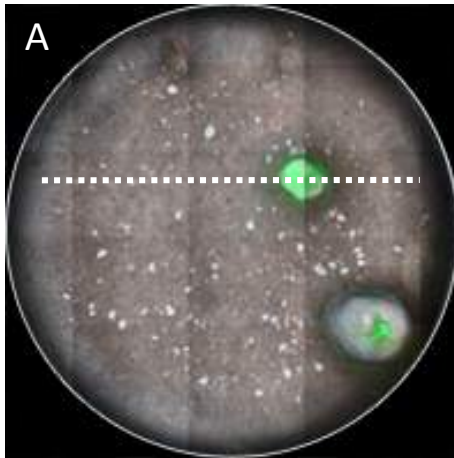
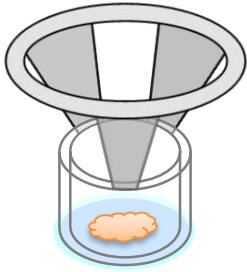


selection,
amplification
& reconstruction tissulaire

insert

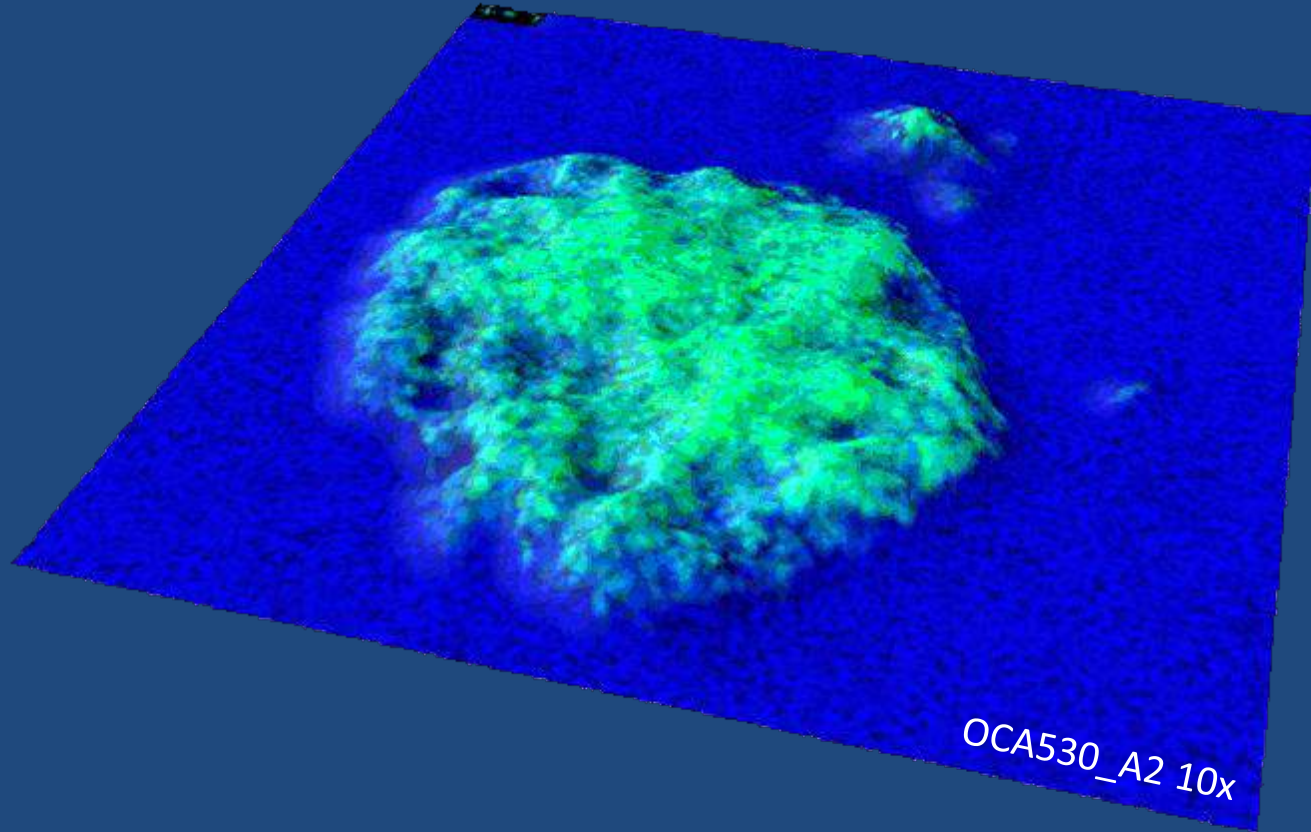


OncoCilAir™
modèle *in vitro*
de cancer du poumon



OncoCilAir

Vue en microscopie confocale



Utube: keyword = oncotheis

<https://www.youtube.com/watch?v=1XgtmmHvUZc>

Utube: keyword = oncotheis

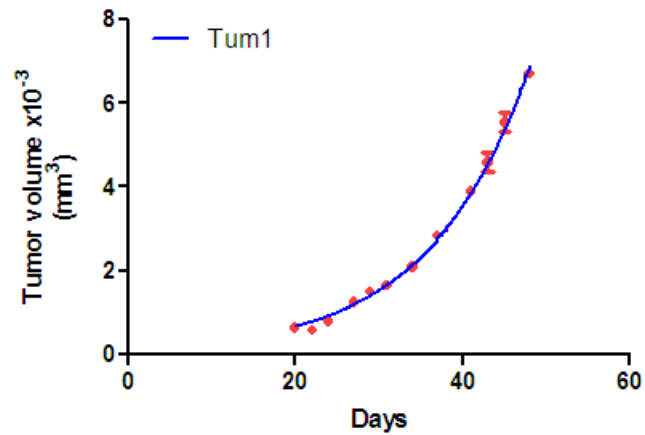
<https://www.youtube.com/watch?v=X8Eb4HDHEJk>

OncoCilAir

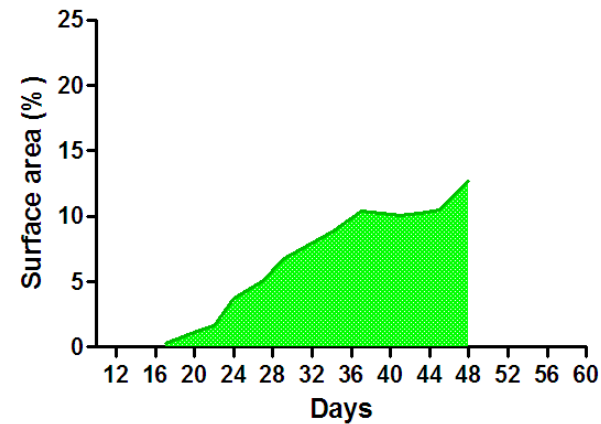
OCA_454

wells A1

Tumor Growth



Percent Tumor Occupancy





Contrôle



selumetinib



trametinib

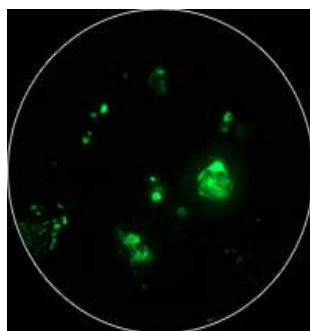
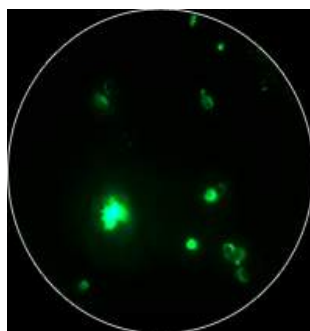
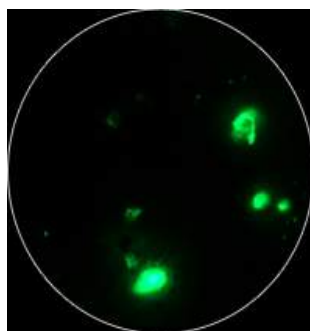
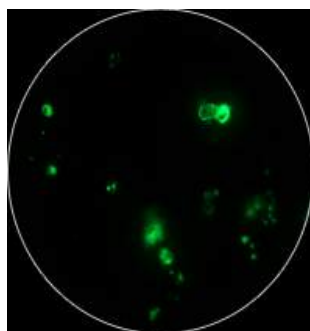
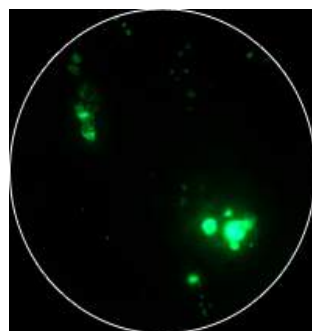


docetaxel

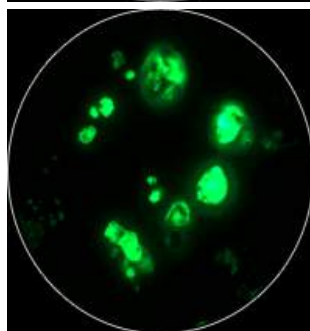
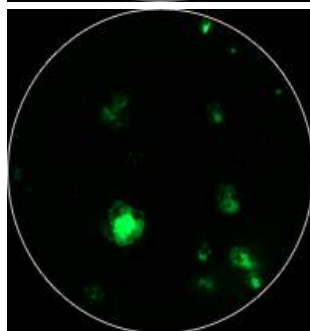
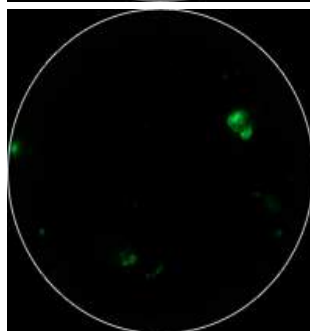
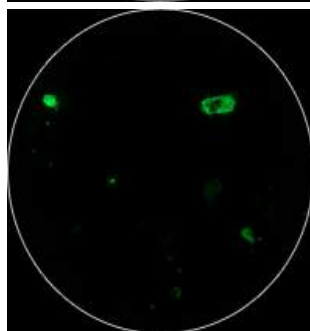
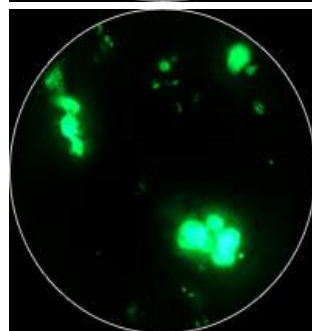


erlotinib

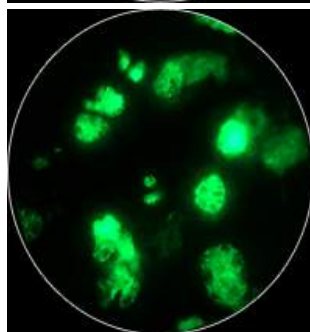
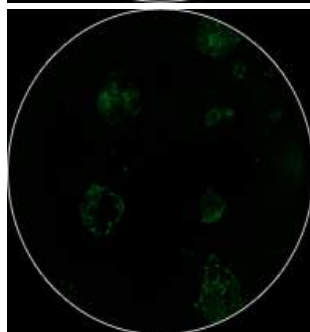
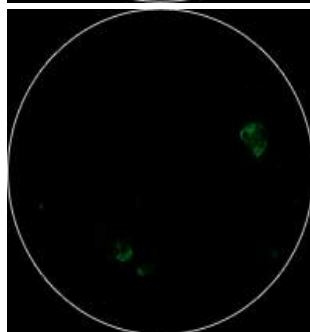
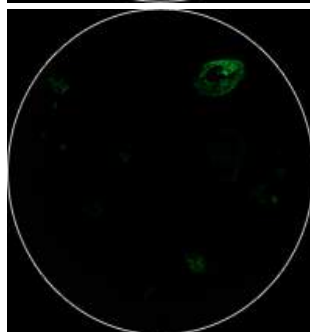
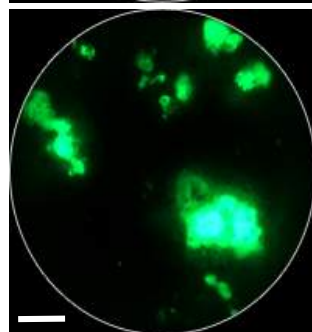
day 0



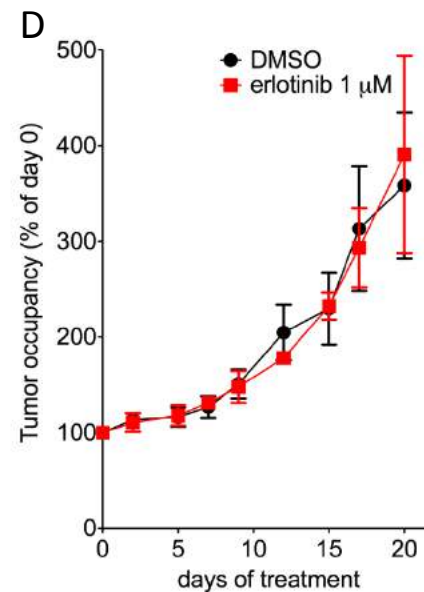
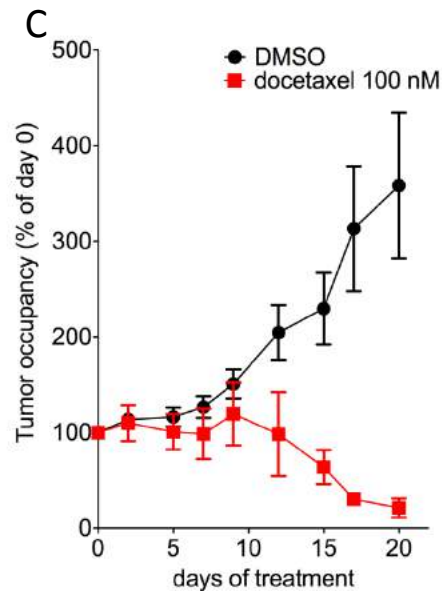
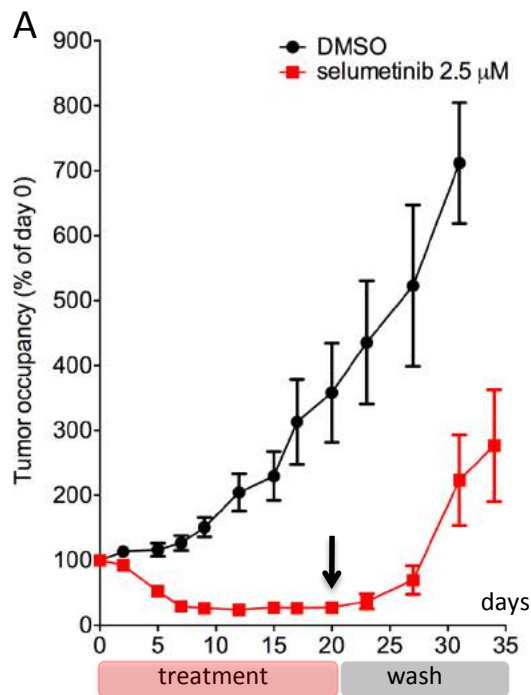
day 9



day 20



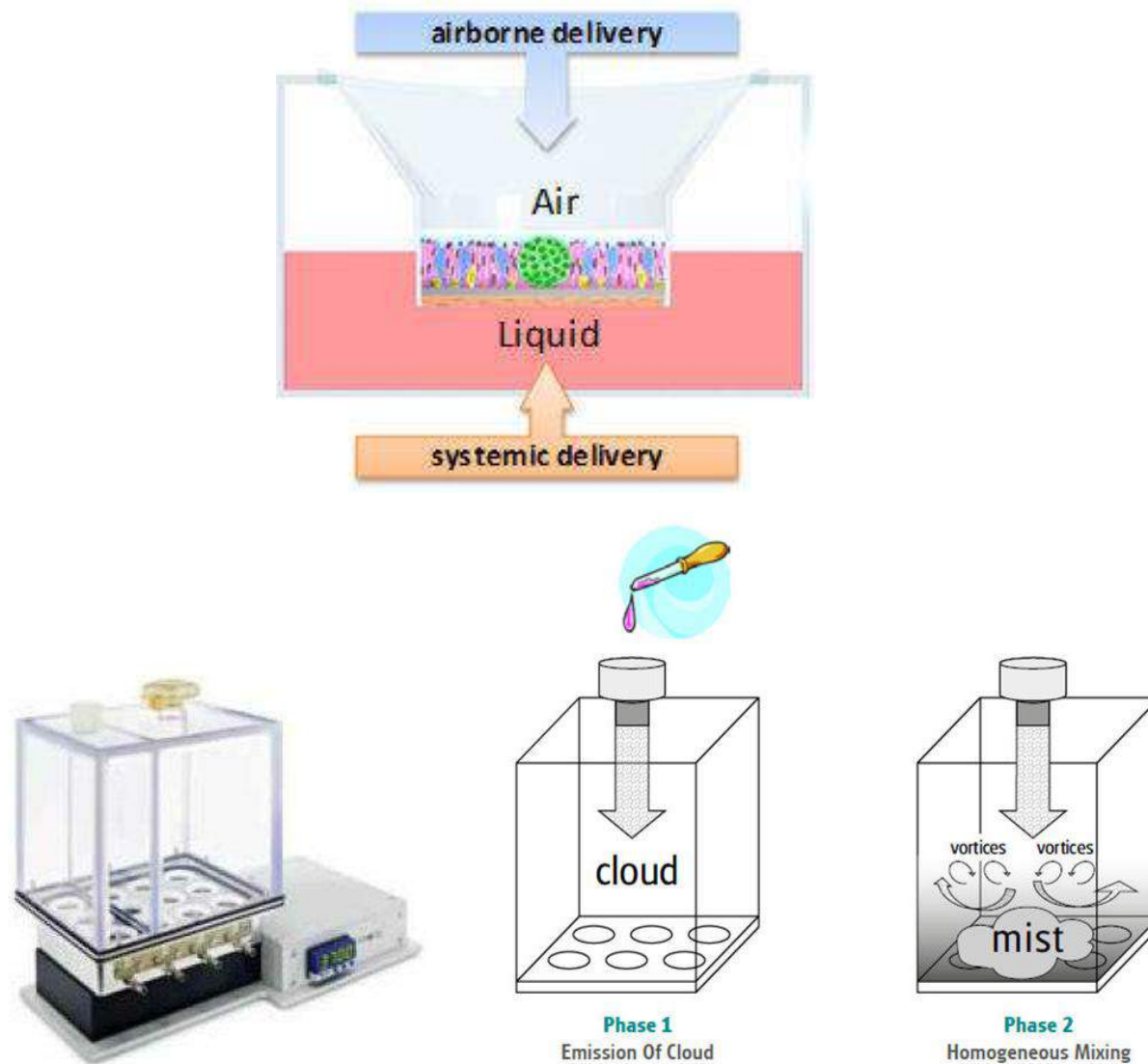
Evaluation de l'efficacité d'un traitement



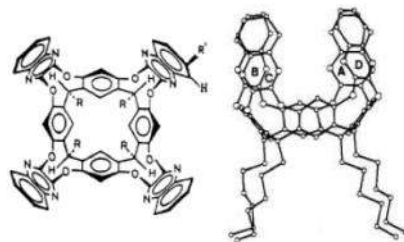
	[in vitro]	[plasma _{max}]
selumetinib	2.5 μ M	1.22 μ M
trametinib	50 nM	38 nM

Mas C et al. J Biotechnol 205:111-9 (2015)

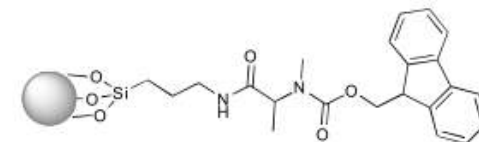
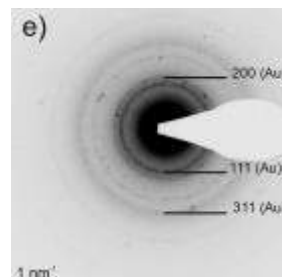
Applications: Aerosol thérapie



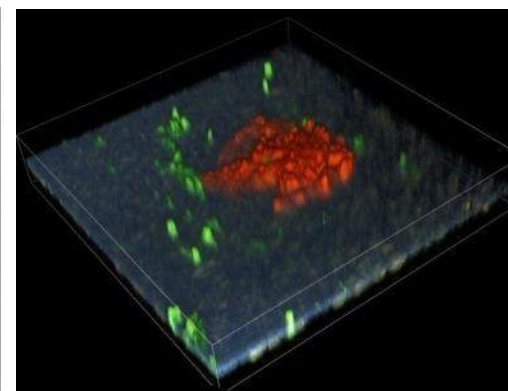
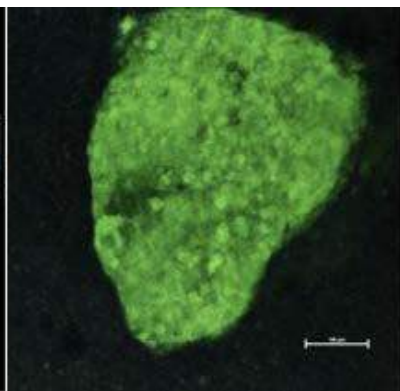
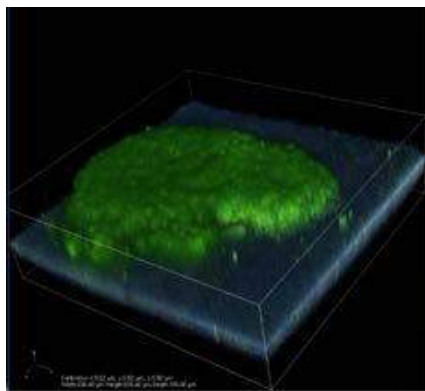
Applications: Test de nano-particules



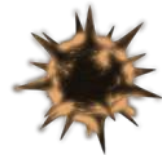
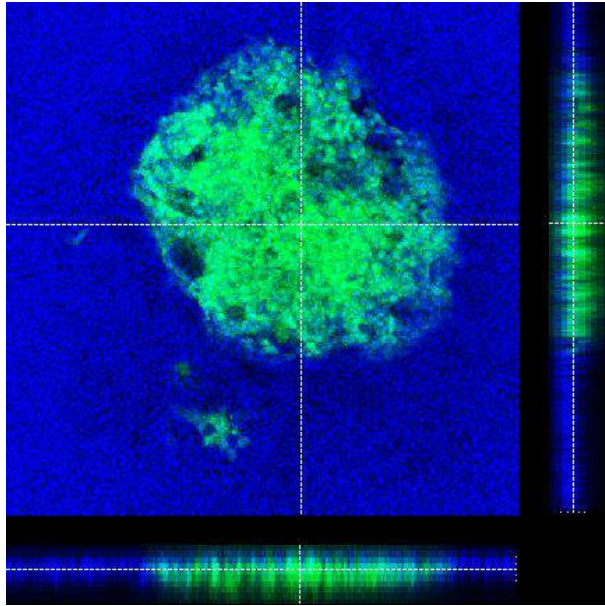
Deep-cavitand



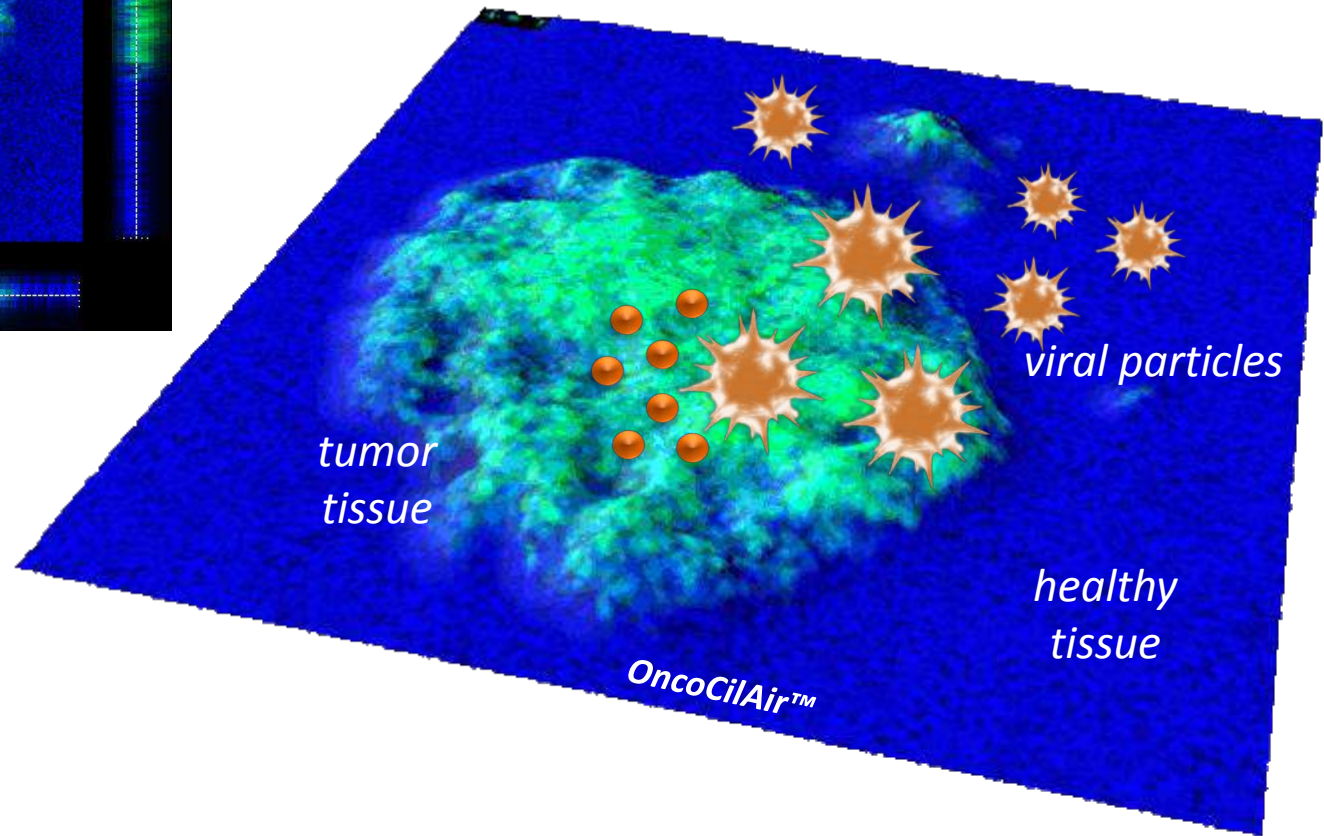
Fe₃O₄-MeAla-Fmoc
nanoparticles



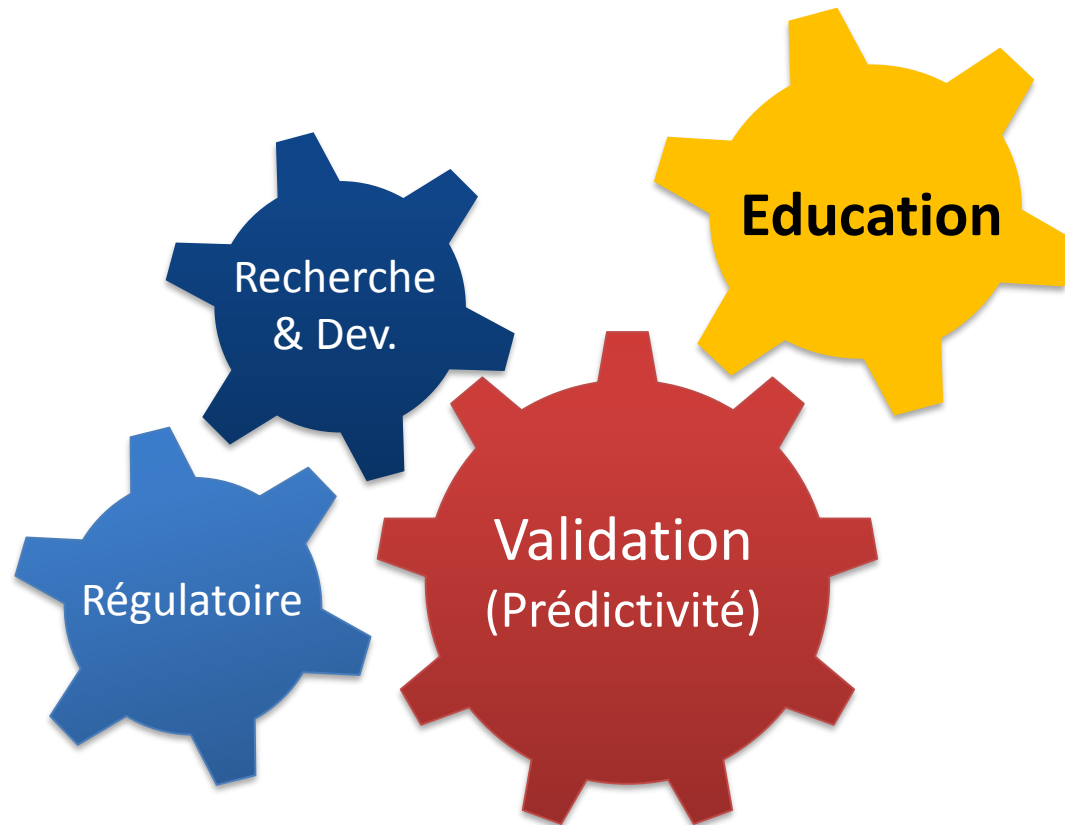
Applications: Thérapie Oncolytique



Modified paramyxoviruses



Le développement des méthodes alternatives



Financements



11 millions



5 millions



0.5 million



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