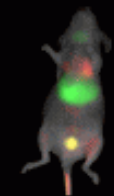
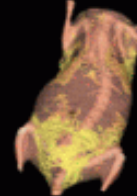
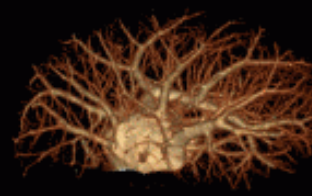


## Utilisation de l'imagerie optique dans les modèles animaux en infectiologie

Thomas CHUZEL, Dr Vét – CSO VOXCAN

Séminaire FLI – 18/09/2015





## Voxcan en quelques chiffres...

### Corporate

**Création** : 2007

**K** : 75 k€ - 5 associés

**Personnels** : 9 personnes (DE, Tech, AQ)

### Site & Partenaires

Campus de Vetagro-Sup

*Institut Claude Bourgelat*  
Animalerie 2000 m<sup>2</sup> A1 et A2

LYONBIOPOLE



### Recherche – 15%

**Programmes collaboratifs co-financés**

2010: PRIM-OA – Eurostars

2011: Acilimab – FUI / Grand Lyon

2014: H&M – FUI / Région RA

2015: Colomatrix – FUI / Grand Lyon

2015 : SPCCT – H2020 / Europe

**Agrément CIR**



GRANDLYON

RhôneAlpes

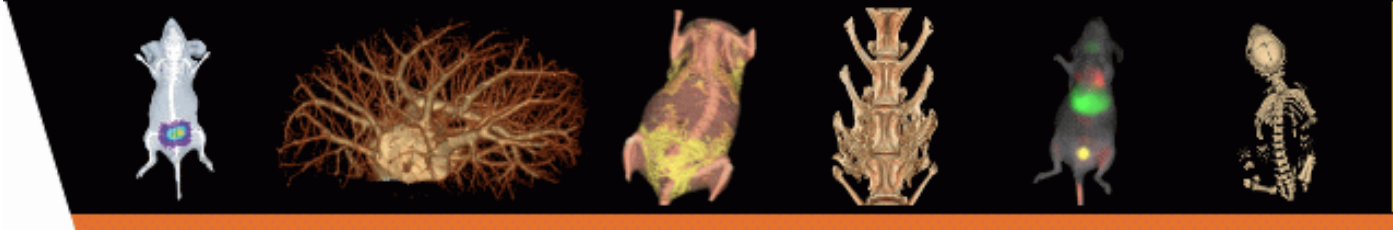


### Prestations

**CA 2013-14** : 800-900 k€

**Clients** : 50% Grands Groupes – 45% Biotechs  
5% Académiques





# → Available Imaging modalities

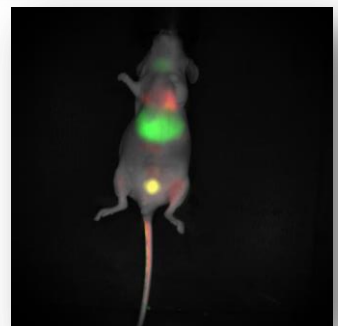
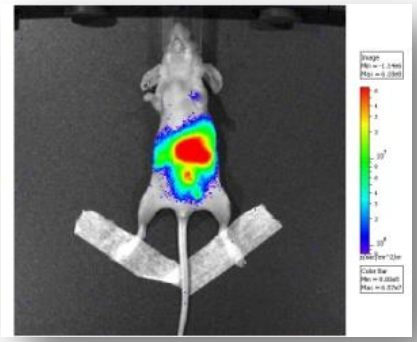
## Anatomical Imaging : CT & μ-CT

→ *Mainly on rodent models*

→ *From rodent models, to ...*



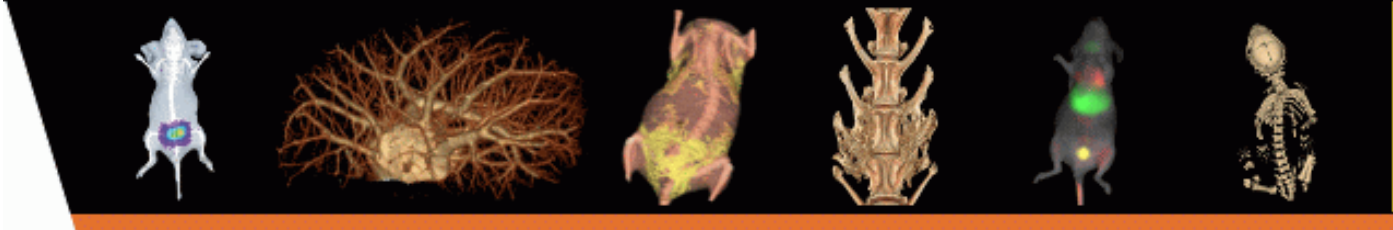
*... Pigs and Non Human Primate*



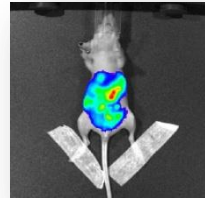
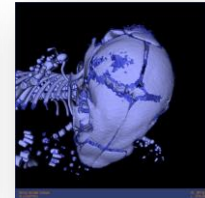
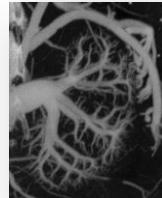
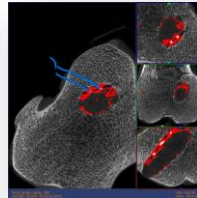
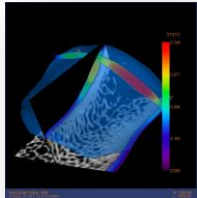
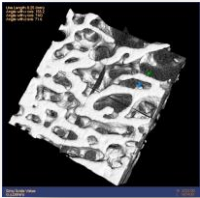
**Functional Imaging: Bioluminescence and Fluorescence**







→ Imaging services in a wide range of therapeutic areas



Anatomical Imaging

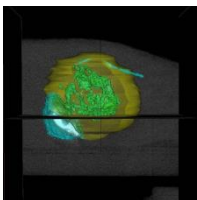
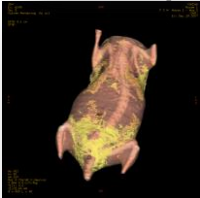
Bone, Cartilage and Implants

Vascular and Respiratory Systems

Metabolic Diseases

Nutrition studies

Oncology



Functional Imaging

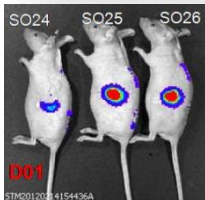
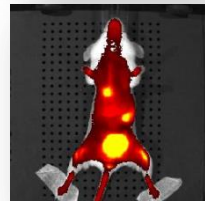
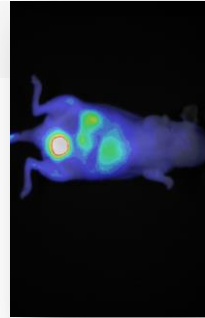
Infectious diseases

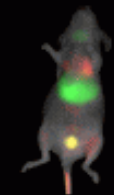
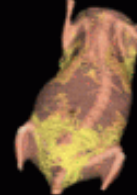
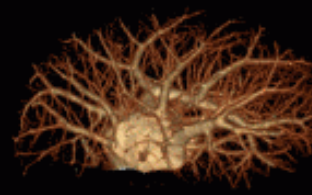
Biodistribution and PK-PD

Oncology

Inflammation

Gene transfer efficiency





## Imagerie Optique : Utilisation en infectiologie préclinique

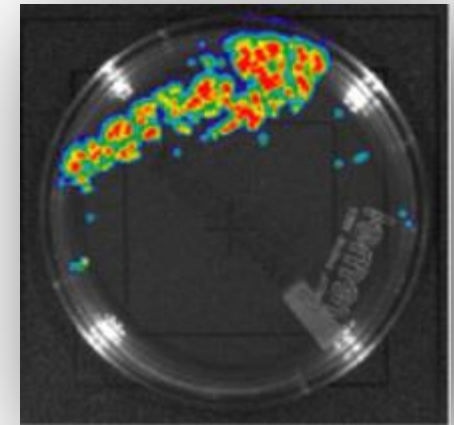
### Utilisation de pathogènes bioluminescents/fluorescents (bactérie / virus)

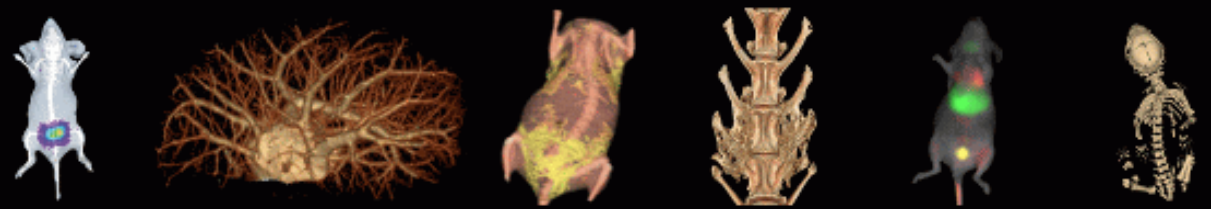
- Actuellement, une douzaine d'espèces bactériennes différentes Luc+ sont disponibles (différentes souches).

**Gram + : S. Aureus (MRSA), S. Pneumoniae, S. Pyogenes, L. Monocytogenes**

**Gram - : E. Coli, P. Aeruginosa, Y. Enterocolitica, S. Dysenteriae, S. Typhirurium, K. Pneumoniae, etc**

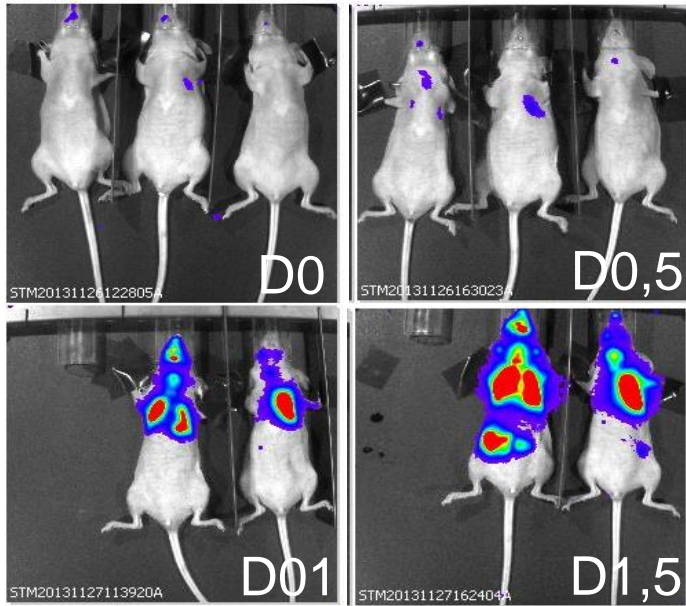
- Intégration d'un opéron *luxABCDE* de *Photobacterium luminescens* dans le génome.
- L'utilisation de souches bactériennes bioluminescentes Luc+ permet de suivre en temps réel et de manière *in-vivo* le développement d'un modèle d'infection expérimentale chez le rongeur.
- Technologie utilisable dans tous les domaines de l'infectiologie :
  - Vaccins
  - Antibiotiques
  - Dispositifs Implantables
  - Caractérisation de modèles de pathologie
- Permet des modèles animaux (rongeurs) variés (infection simple, implants textiles et métalliques, cathéters, etc).
- **Virus : Grippe H1N1, IAV, HBV, etc...**



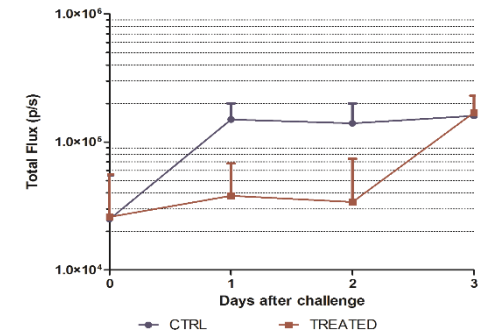
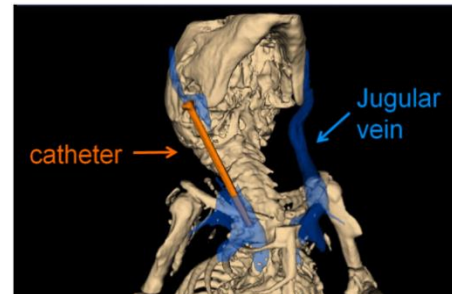
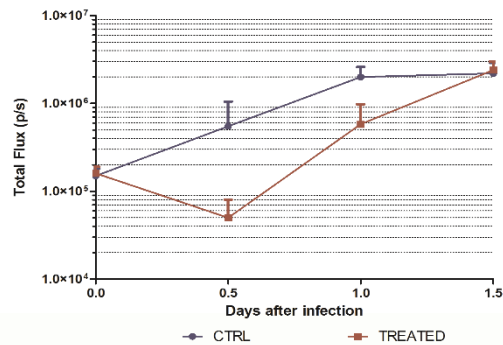
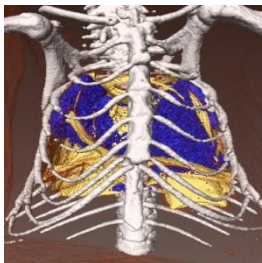
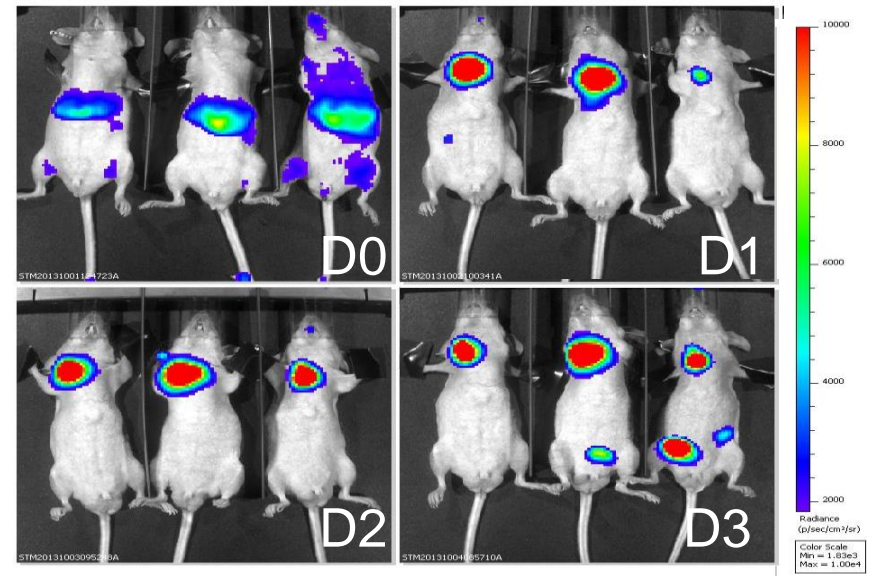


# Imagerie Optique : Modèles Animaux en infectiologie – 1/3

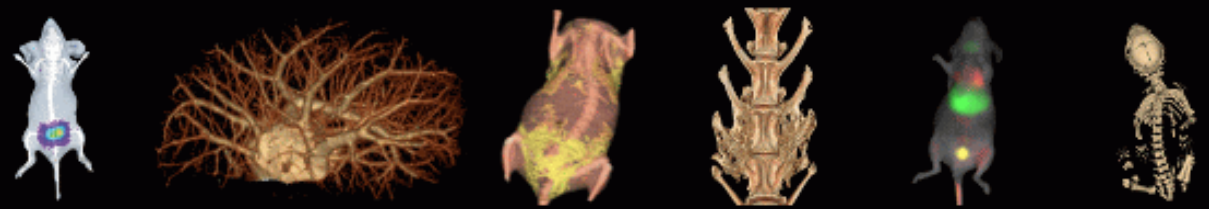
Pneumonie - P. Aeruginosa/S.Aureus



Infection à biofilm - S. Aureus - sur cathéter CVC

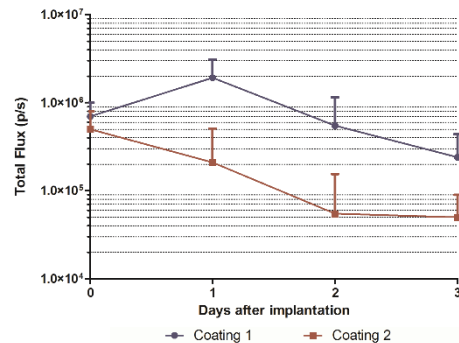
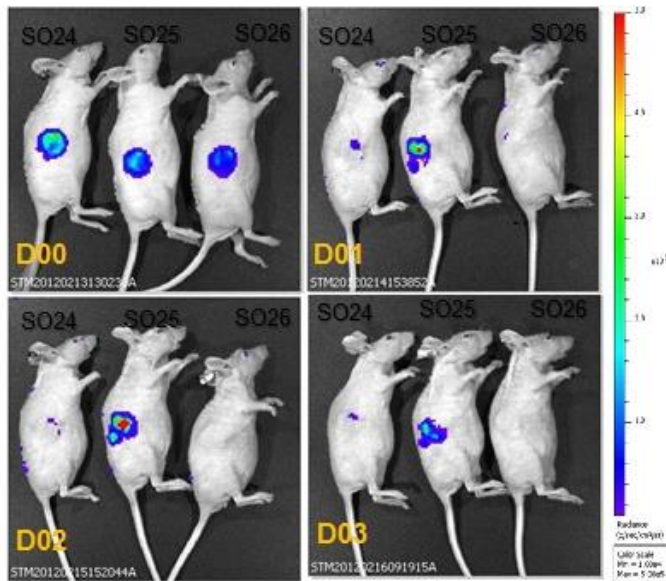




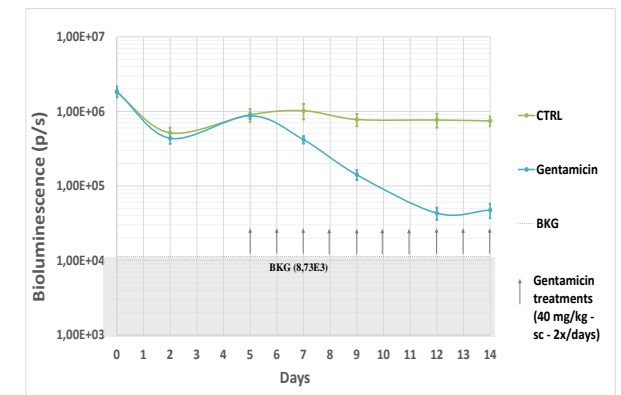
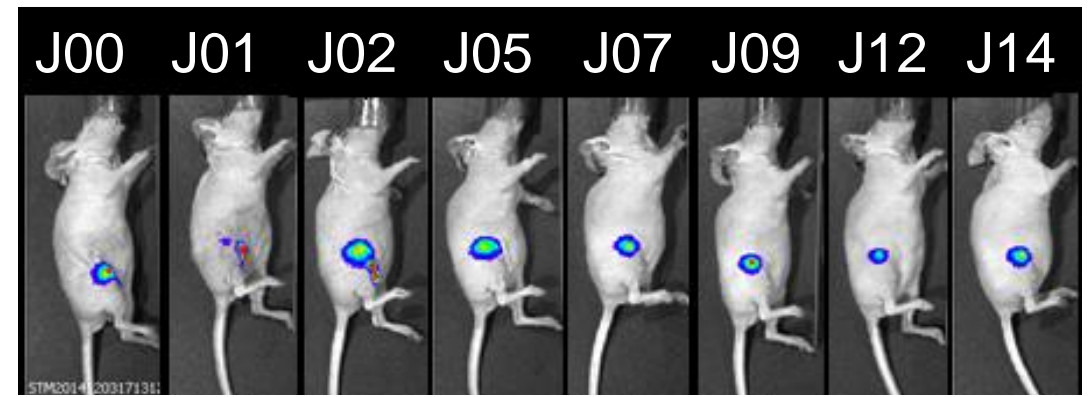


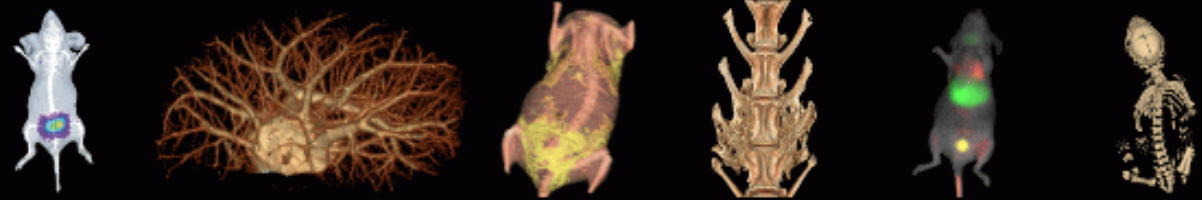
## Imagerie Optique : Modèles Animaux en infectiologie – 2/3

Infection implant textile sous cutané - S. Aureus



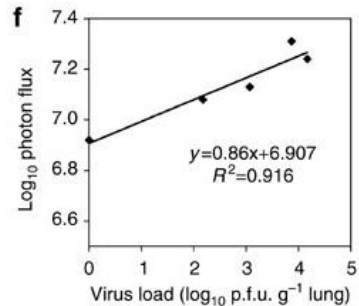
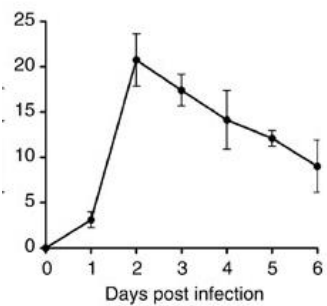
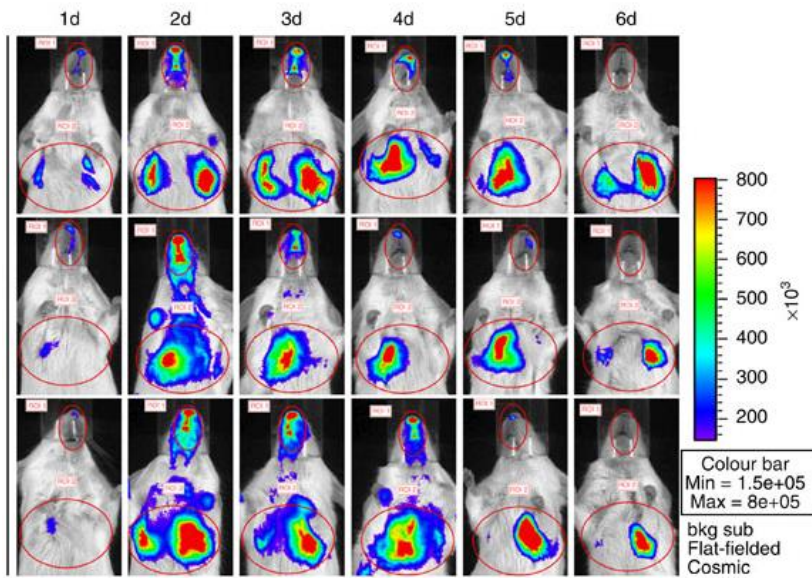
Modèle d'infection ostéoarticulaire - S. Aureus - sur prothèse intra-fémorale



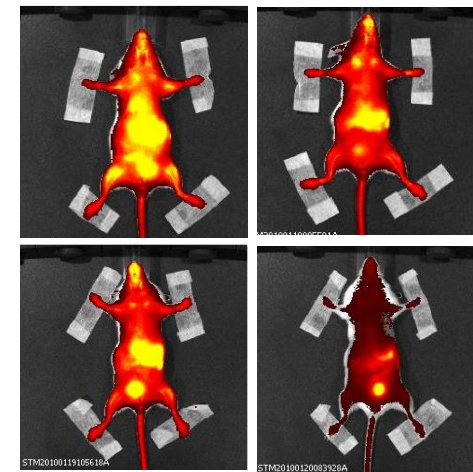


# Imagerie Optique : Modèles Animaux en infectiologie – 3/3

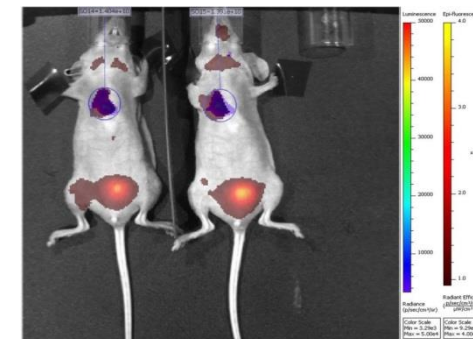
## Infection intra-nasale IAV - Luc



## Biodistribution corps entier



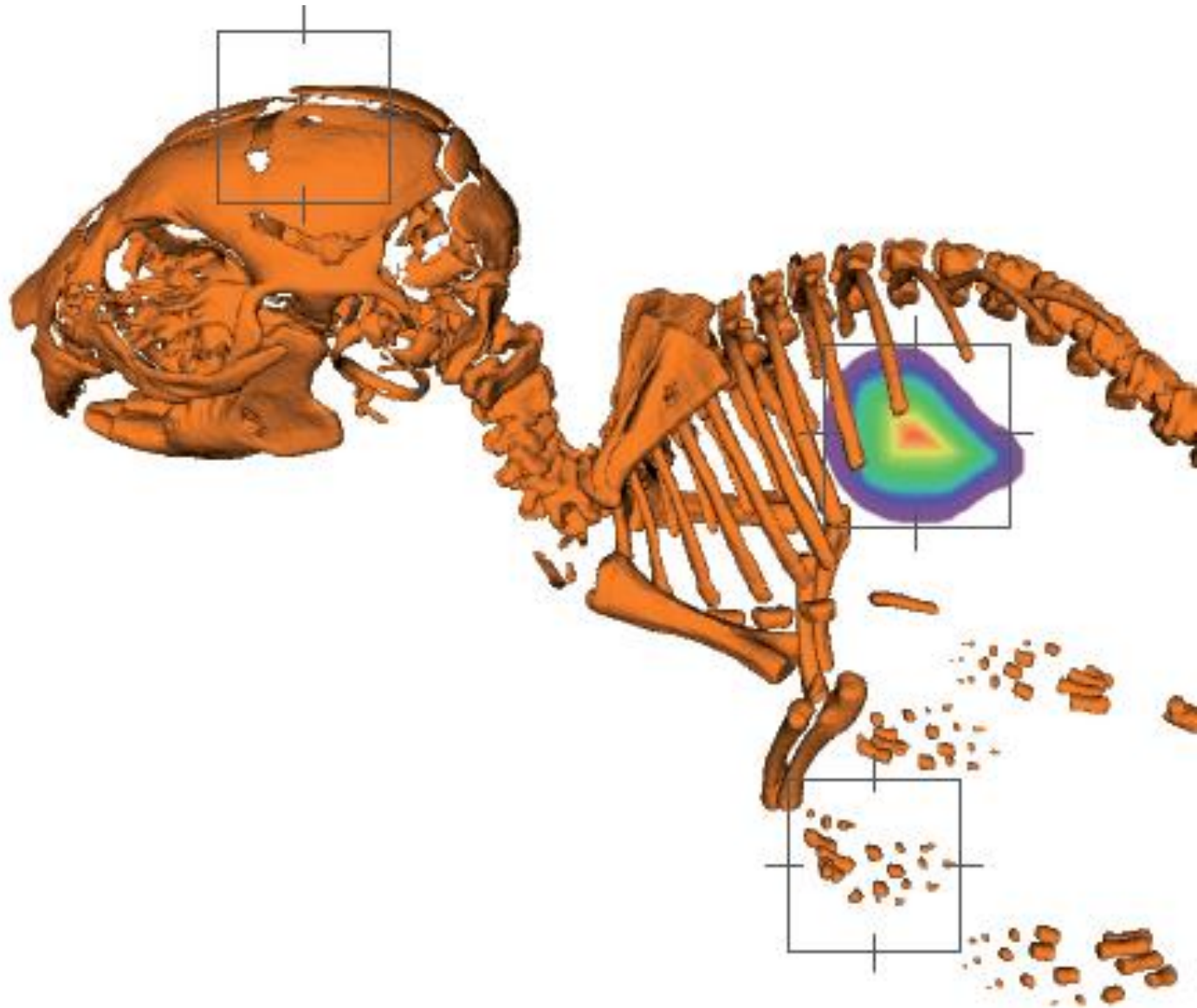
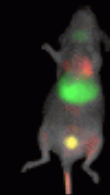
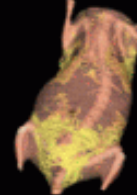
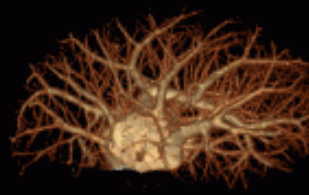
## Colocalisation : Biolum & Fluo







V O X C A N  
→ Animal Medical Imaging Services



Pour toute demande :

M : [contact@voxcan.fr](mailto:contact@voxcan.fr)

T : 04.78.19.52.36

