

From invention to innovation

## SCIENTIFIC EXPERTISE

- Facilities and recognized know-how of ENVA and UPEC teams (surgeons, pharmacologists, veterinarians, cardiologists, etc.)
- Pathophysiology and pharmacology of coronary and cardiac insufficiencies
- Medical devices, instrumentation
- Animal models
- Participation in international clinical trials
- Surgery, pre- & post-operative follow-up

## APPLICATIONS

- Therapeutic treatments & Medical devices
- *In vivo* cardiovascular investigations
- *In vivo* pharmacology studies and pre-clinical trials

## TRACK RECORD

- Cardioprotective strategies to establish a preclinical POC.
- Hemodynamic substances evaluation for myocardial protection

## PUBLICATIONS

Kohlhauer M. & al. *Crit Care Med.* 2015 Oct;43(10)  
 Su JB. & al. *Cardiovasc Res.* 2012 ; 95 :86-96 (IF 5.9)  
 Rienzo M. & al. *Basic Res Cardiol.* 2012; 107:298 (IF 5.9)  
 Galaup A & al. *Circulation.* 2012; 125:140-9 (IF 15.2)  
 Chenoune M & al. *Circulation.* 2011; 124:901-11,1-7 (IF 15.2)  
 Couvreur N & al. *Eur Heart J.* 2010 ; 31 :1529-37 (IF 14.0)

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## PLATFORM OF PRECLINICAL RESEARCH FOR HEART FAILURE, MYOCARDIAL ISCHEMIA AND RESUSCITATION

Platform dedicated to animal experiments in order to investigate physiological processes, develop therapeutic products & techniques and control product safety.

**Preclinical study ■ Functional exploration ■ Cardiology ■ Heart failure ■ Animal models ■ Translational research**

## SERVICE DESCRIPTION

Critical to ensure the best success when transferred to human, the platform combine highly sophisticated and unique experimental model of disease along with the experience for the establishment of proof of concepts.

The platform proposes stimulating coronary and cardiac insufficiencies models for the study and development of cardioprotective molecules and medical devices.

This is one of the few platform working with awake chronically implanted animals which are highly predictive preclinical models. Its location on the ENVA site (National Veterinary School of Alfort) and the Creteil Medical School (Paris Est Creteil University) guarantees access to the best medical techniques and expertise in the fields of cardiovascular disease.



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## OFFER

- Animal models (<50kg): dog, pig, rabbit and rodent ;
- Awake chronically implanted animals
- Development of pathological models in the field of cardiology
- Study and development of therapeutic molecules and medical devices,
- General hemodynamic assessment (blood pressures; cardiac and coronary blood flows; echocardiography; sonomicrometry)
- Percutaneous coronary intervention (fluoroscopy)
- Neurological function assessment
- Development of a biorepository