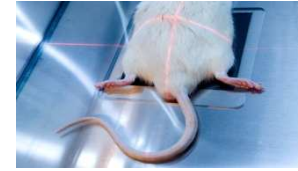


## STUDY TITLE :

# RAT EXPERIMENTAL MODEL OF RHEUMATOID ARTHRITIS



## PROTOCOL STUDY



**Animals:**

Mice

**Age :**

7 weeks old (on receipt)

**Sex :**

Male

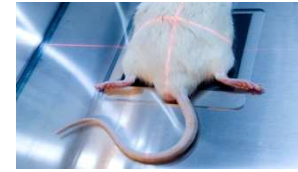
**Strain :**

Wistar

**Supplier :**

Charles River Laboratories or Elevage Janvier

## Experimental model

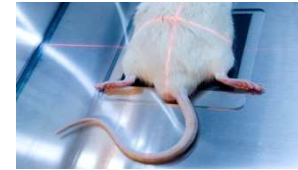


### **CIA model – Collagen-Induced Arthritis model :**

- ✓ Intradermic injection (in the tail) of 100 µg of bovine collagen type II (CII) emulsified in Freund's Complete Adjuvant followed by a booster at Day 14.
- ✓ Arthritis appears on average 7 to 10 days after the first injection
- ✓ Affecting between 80 and 100% of injected animals
- ✓ The disease starts by an increasing inflammation affecting progressively the 4 legs.



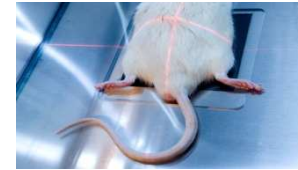
## Treatment



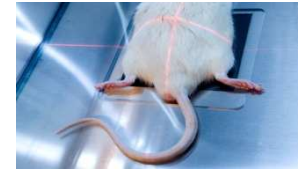
- ✓ Any administration route
- ✓ Treatment to be defined with the sponsor (start and frequency)



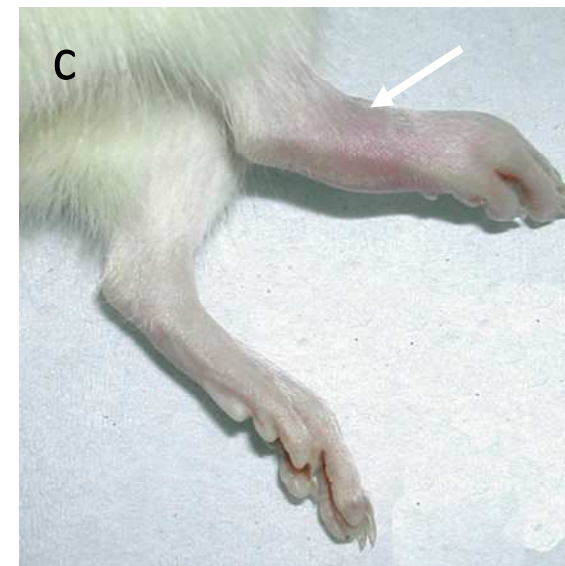
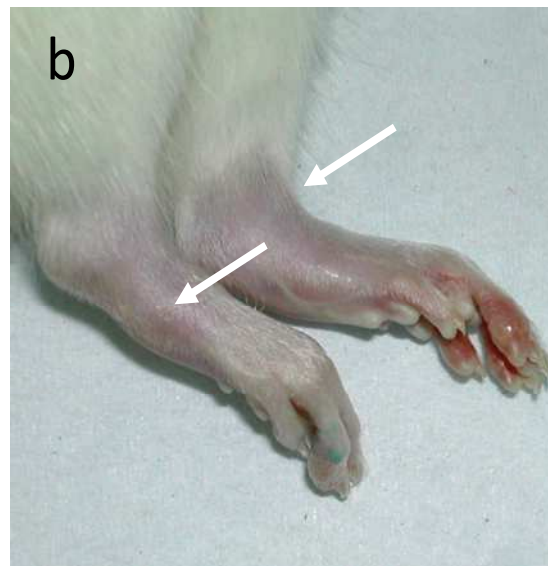
## Clinical follow-up



- ✓ Weight evolution,
- ✓ General State of the animal,
- ✓ Walking troubles,
- ✓ Posterior legs volume measuring,
- ✓ Anti-hyperalgetic activity (Qualitative study : animal behaviour, reaction to pain),
- ✓ Anti-inflammatory activity (clinical scoring) / toes, tarsi, ankles.

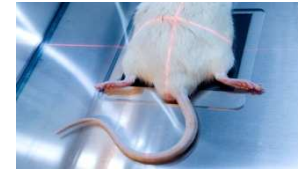


**7 days after the second injection of type II collagen (D21).**



Inflammatory oedemas, bilateral or not (white arrows) appear at the ankles area.

Clinical follow-up



The articulations are scored by the same person

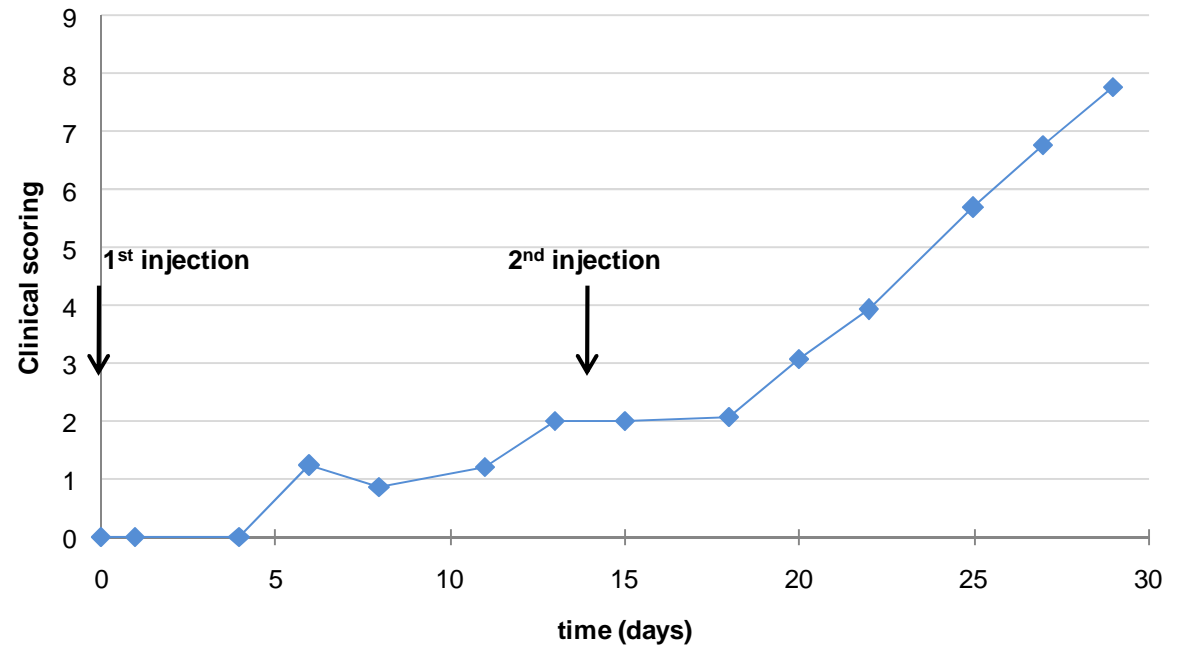
**scoring 0** : normal

**scoring 1** : rash

**scoring 2** : œdema/swelling

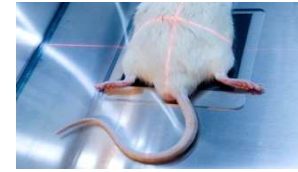
**scoring 3** : œdema and deformation

**scoring 4** : necrosis



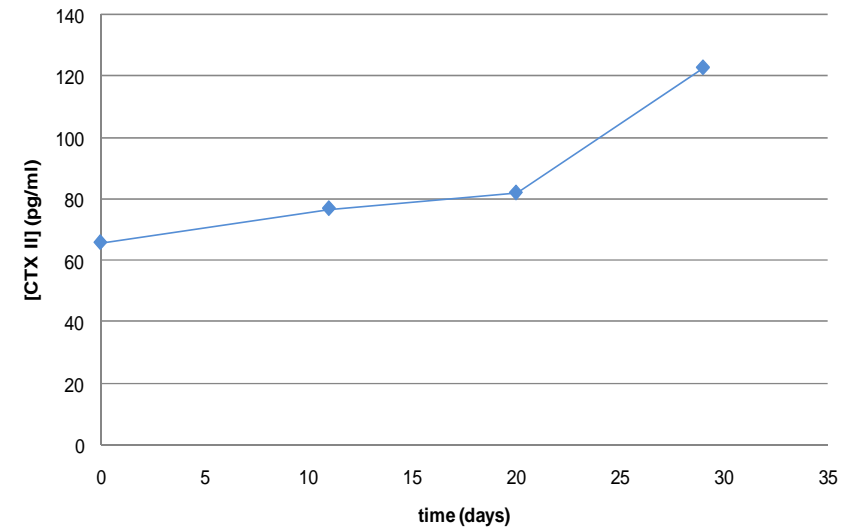
Score represent the sum of clinical scoring from the two ankles

## Biological follow-up



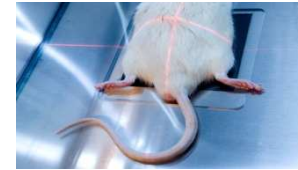
✓ ELISA assays on serum bone makers on 96 well plates in duplicate

✓ Serum markers of bone resorption measurement : CTX, TRAP 5b,...





## Radiological follow-up

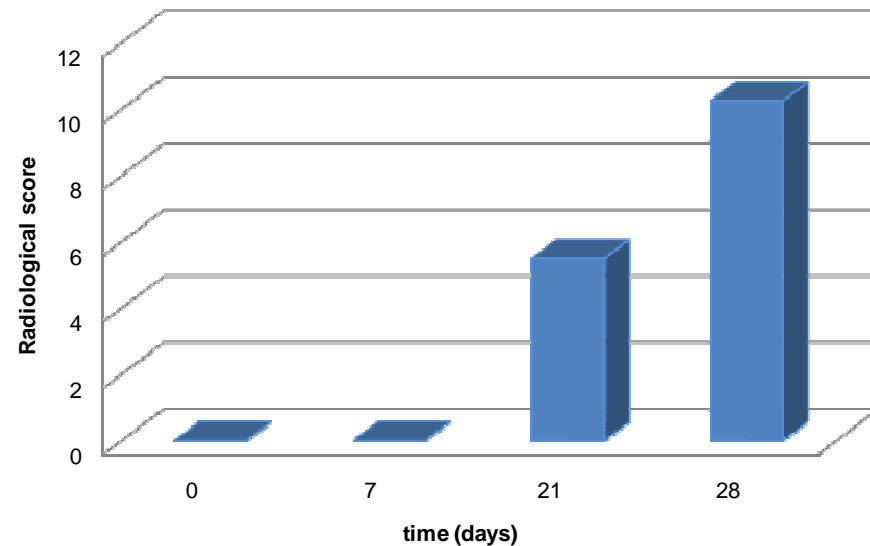
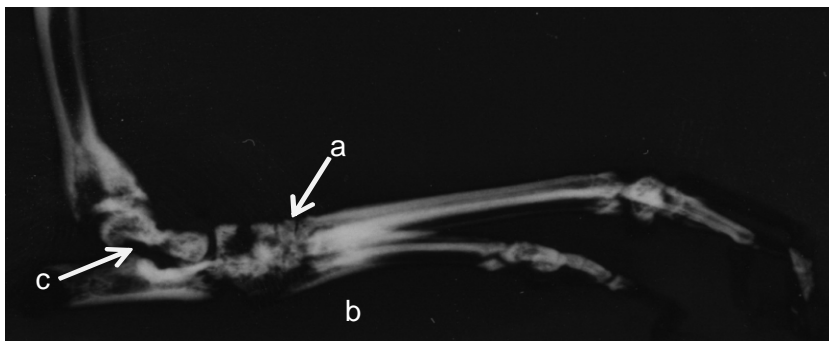


✓ Kinetic of radiographical analyses



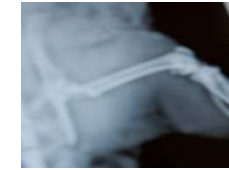
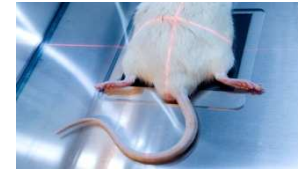
Scoring	Parameter
0 to 3	Oedema
0 to 3	Diastasis
0 to 4	Destruction

✓ Scoring of radiographs:



*Rat experimental model of rheumatoid arthritis - ABS*

## Histological studies

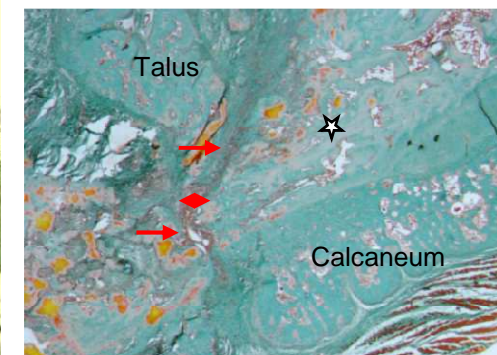
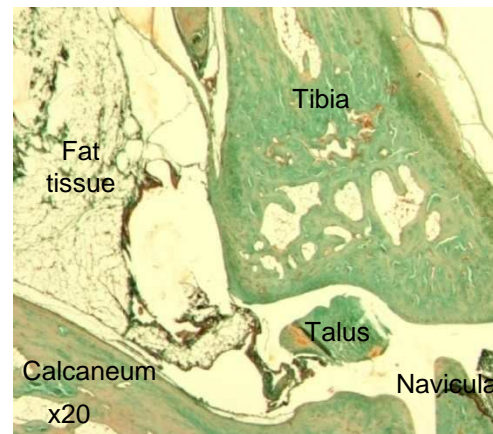


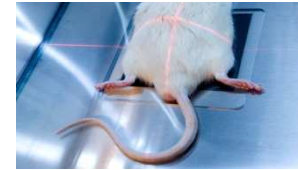
- ✓ Animals euthanasia at the end of the study
- ✓ Histological studies performed on posterior articulations (ankle) of each animal
- ✓ Per rat: Ankles are embedded in paraffin after decalcification

→ Stainings proposed:

- TRAP staining / PARAFFIN
- Masson's Trichrome staining/ PARAFFIN
- Hematoxilin / Eosin / PARAFFIN

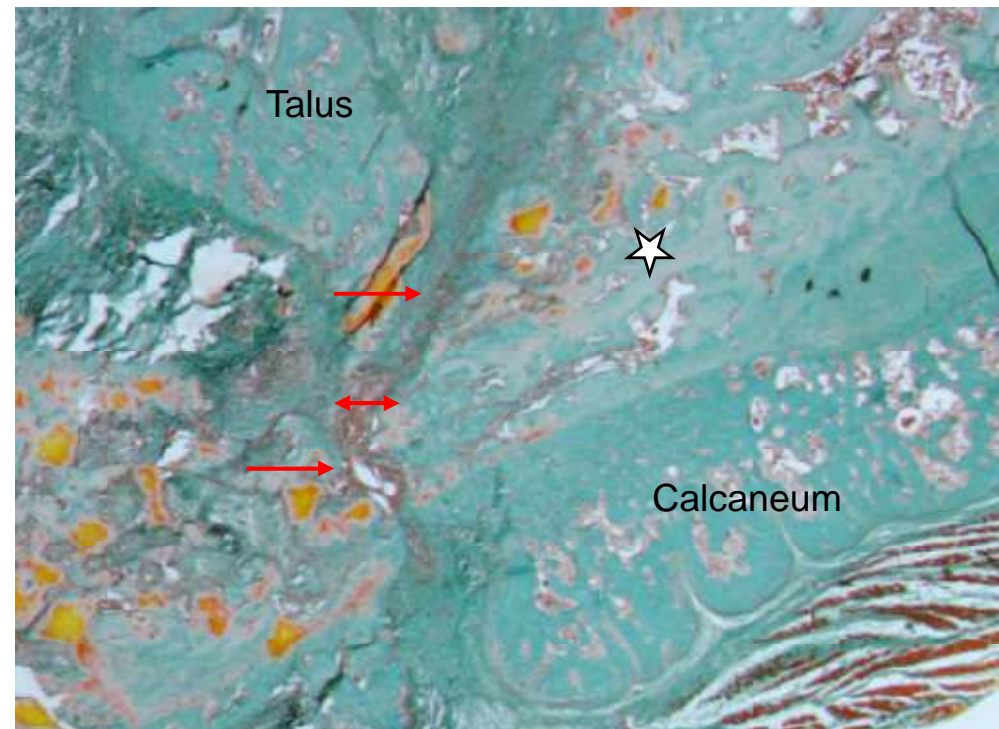
*Other stainings are available*





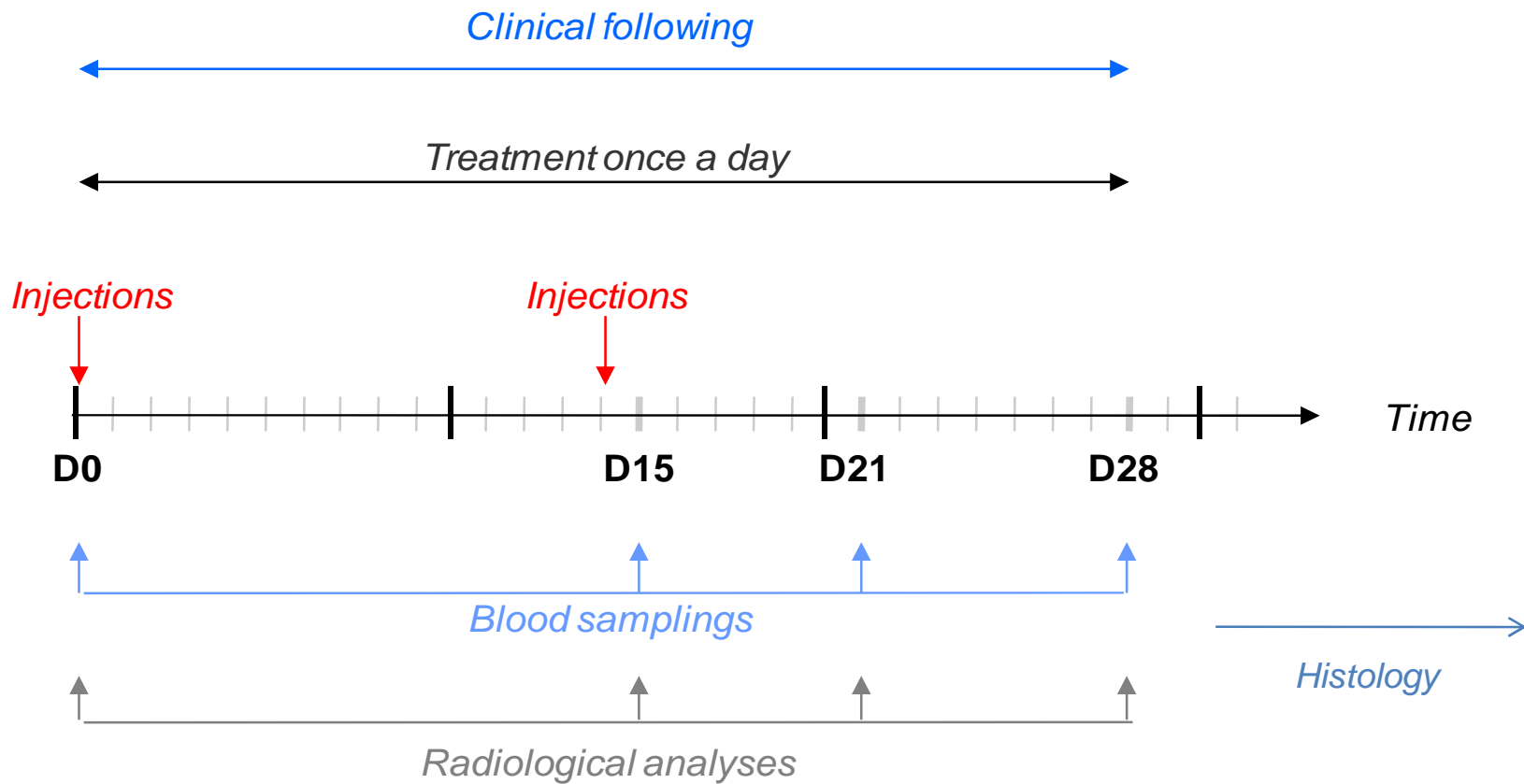
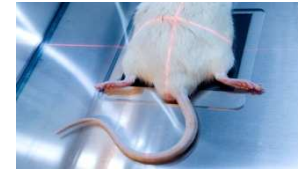
**Parameters studied :**

- ✓ Synoviocytes proliferation (red arrows)
- ✓ Osteophytes formation
- ✓ Inflammation
- ✓ Lysis ranges
- ✓ Articular plucking (white star)
- ✓ Tarsi flattening





## SYNOPSIS





**Ronan LE BOT – CEO**

[ronan.lebot@atlantic-bone-screen.com](mailto:ronan.lebot@atlantic-bone-screen.com)

**Florence DAUBINE, PhD – Project Manager**

[florence.daubine@atlantic-bone-screen.com](mailto:florence.daubine@atlantic-bone-screen.com)

**Fabien PETIT – Project Manager**

[fabien.petit@atlantic-bone-screen.com](mailto:fabien.petit@atlantic-bone-screen.com)

**Elisabeth PORCHER – Business Development Manager**

[elisabeth.porcher@atlantic-bone-screen.com](mailto:elisabeth.porcher@atlantic-bone-screen.com)

**ATLANTIC BONE SCREEN SAS**

**1, rue Gaston Veil**

**44000 Nantes**

**France**

**[www.atlantic-bone-screen.com](http://www.atlantic-bone-screen.com)**

**Tel : +33(0)2 40 41 11 25**

**Fax : + 33(0)2 40 41 28 35**

**Contact us...**

**... And we will send you a tailor-made protocol study**