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Core Facility Manager

The generation and use of reliable and adequate animal models are essential tools in biomedical research.

The genetic engineering and animal modelling core facility offers its academic and industrial partners several animal modelling services based in part on CRISPR-Cas9 technology, for which the facility acquired a licence to use from the Broad Institute in 2017 and from ERS Genomics in 2023.

GENETIC ENGINEERING AND ANIMAL MODELLING

SERVICES

- **CRISPR-CAS9 AND MICROINJECTION SERVICES**
Generation of new rodent models by CRISPR-Cas9, classical transgenesis (random transgene insertion)
- **CRISPR-CAS9 IN CELLS**
Modifying immortalized cell lines
- **GENOTYPING SERVICES**
Maintaining a colony or generating new rodent models
- **STRAIN CRYOPRESERVATION (RODENTS AND ZEBRAFISH)**
Embryo production and cryopreservation, sperm cryopreservation
- **STRAIN REVIVAL**
Embryo transfer procedure
- **REDERIVATION SERVICE**
Embryo production, collection and transfer




RESEARCH IN ACTION

Using CRISPR-Cas9 technology, our core facility has developed an approach that enables the generation of various conditional KO models targeting complex loci. This approach was published in the journal *BMC Biology* in 2022. One of these generated models has also made it possible to develop a new antibody that recognizes the CLCF1 protein involved in the immune system function. This research was published in the journal *Scientific Reports* in 2024.

HIGHLIGHTS

Our core facility specializes in generating new rodent models with approaches in classical transgenesis, rederivation, cryopreservation, colony management and genotyping. We also use new technologies such as CRISPR-Cas9.

Since 2017, we have developed in-depth expertise through the generation of **36 new animal models**, including

-  **12** classical KO models (mice and rats)
-  **10** specific point mutations
-  **11** conditional KOs (insertion of loxP sites—mice)

We have also completed **three immortalized cell projects**.

