

The use of animals in biomedical research

Research involving animal experiments has made important contributions to advancements in life sciences and medicine, which have improved the health of human beings and animals.

At this time, animal experimentation remains an essential tool in research aiming to better understand the development and progress of diseases such as cancer, diabetes, cardiovascular or neurodegenerative diseases and to improve prevention and treatment options for these conditions.

Our position

The Luxembourg National Research Fund (FNR) will support research involving animal experimentation in Luxembourg if the expected outcomes are beneficial and compelling, if rigorous animal welfare standards are respected and if no alternative experimentation methods exist.

Specifically, the following conditions must be fulfilled:

- All animal experiments are conducted in accordance with national¹ and EU legislation² covering the use of animals in research (EU Directive 2010/63) and the EU convention for the protection of vertebrate animals for experimental or other scientific purposes.
- Laboratories handling animals for research purposes and performing interventions on animals have received approval by the Ministry of Agriculture and the Ministry of Health in Luxembourg.
- Research institutions conducting animal experiments have an Animal Welfare Structure (AWS) that provides ethical evaluation of all protocols and guidance to the researchers working with animals.
- The application of the 3Rs (refinement, reduction and replacement of animals) has been convincingly addressed and no viable non-animal alternatives exist.

International research collaborations supported by the FNR are expected to be carried out in the same spirit as the national legislation as well as being compliant with any local legislation and ethics.

Replacing, reducing, refining – the 3Rs

Where animals are used in research, the application of the 3Rs (Replace, Reduce, Refine) must be convincingly addressed.

Replacement – promoting the use of other methods, if available

Reduction – reducing the number of animals used

Refinement – minimising pain, suffering, distress or lasting harm, as well as improving the welfare

¹ <http://www.legilux.public.lu/leg/a/archives/2013/0014/2013A0260A.html>

² http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm



Statistics & Facts

Out of all ongoing FNR-funded projects, 5% involve animal research (status 1st September 2016). Animals used in current FNR-funded projects in Luxembourg are mice and rats (83%), and zebrafish (17%).

The FNR does not support research involving non-human primates, cats, dogs or horses. There is currently no research involving experimentation with these animals in Luxembourg.

The FNR also does not support the use of animals for testing cosmetics. Testing of cosmetics and cosmetic ingredients on animals has been banned in the EU since 2013.

Statistics on animals used for research purposes in Luxembourg are published every year by the Ministry of Agriculture³.

Alternatives to animal research

The FNR also supports research into alternatives to animal research. One example is the HuMiX ('Human-Microbial X(cross)-talk') 'organ-on-a-chip' model for the human gastrointestinal tract.

The model – a laboratory device the size of a beer mat – is developed to study the interaction between the microbiome, the community of all microbial organisms that live in and on our body, and human cells – all in vitro, without the need for animal models.

The human microbiome is emerging as a key area of research. The model and resulting insights will allow a better understanding of whether changes in the gut's microbiome cause disease, or if such changes are a consequence of the disease.

Another key benefit of HuMiX technology is that it allows pre-clinical testing in an environment that is analogous to the human system. It could be used to pre-screen the effects of drugs on patient-derived cells and microbiota outside the human body. This could help determine a drug's suitability in humans and improve their overall success in the drug development pipeline.

More information about the HuMiX project is available [on the FNR website](#).

³ <http://www.ma.public.lu/>