

# The concept of the three Rs

The concept of the three R's was introduced in 1959 to prevent unnecessary suffering of animals during scientific experiments. It consists of the following points:

## 1. Replacement

Live animals should be replaced in the experiment to the greatest possible extent by alternative methods: in vitro (tissue cultures), organisms at a lower stage of development (bacteria), immunological techniques, mathematical modeling, etc.

## 2. Reduction

The smallest possible number of animals capable of giving valid results should be included in the experiment. In this context, knowledge of the behavior and physiology, nutritional requirements, environment, etc. of the animals used is essential.

## 3. Refinement

The experiment should be conducted in such a way that the animals do not suffer unnecessarily, i.e. unnecessary stress factors and painful approaches should be excluded (the use of anesthetics and analgesics is appropriate). Each animal should be used only once in an experiment.



Laboratory animals

In the Czech Republic, the conditions for working with laboratory animals are defined by the **Animal Protection Act** (applies only to vertebrates):

- the experimenter must have a certificate of professional competence for working with laboratory animals,
- supplier and user equipment must hold accreditation,
- the veterinary administration provides a statement on the breeding and use of laboratory animals,
- experiments must be well planned in the design of experiments.

**Compliance** with these conditions is checked at three levels:

- *Central Commission for Animal Protection* (supreme body),
- *Audit Committee* (at the Ministry level),
- *Expert committee* (at the user device level).