



Fields of research for more animal welfare

What are the benefits of animal experiments? The BfR “Animal-TestInfo” database provides answers and shows how the protection of laboratory animals can be improved.

The questions are obvious: what is the actual purpose of animal experiments? In which areas it is necessary to do more for animal welfare? Since 4 December 2014, it is possible to answer those questions. On this day, the BfR launched the “animaltestinfo.de” website. The AnimalTestInfo database provides transparent and easily accessible information about experiments with animals. Every authorised project in Germany involving animal experimentation is listed in this database along with easily understandable information in the form of non-technical project summaries (NTS).

Legislation makes transparency mandatory

The legal basis for the publication of information on authorised animal experiments is the European Directive 2010/63/EU on the protection of animals used for scientific purposes. This directive stipulates that every EU member state must inform the general public about animal experiments by publishing generally understandable summaries. The directive was implemented into German law in the summer of 2013 through the amendment of the Animal Welfare Act and the enactment of the Regulation on Laboratory Animal Welfare. Ever since, researchers have to submit a non-technical

project summary along with their project application. Among other things, this summary must contain details of the expected benefits, number and species of animals to be used, the severity levels they are likely to be exposed to and information on whether or not the requirements of the 3R principle have been applied (see interview on page 42). Once approval has been granted for an animal experiment, the responsible authorities release the corresponding NTS in the AnimalTestInfo database for publication.

Systematic evaluation of data

Currently, more than 10,000 anonymised non-technical project summaries are listed in AnimalTestInfo and about 2,800 entries are being added every year. Every month, approximately 1,000 users, most of them from Germany but also from other European countries, the USA and Arab and Asian countries, access the database. Although AnimalTestInfo was set up primarily as an information source for the general public, the information contained in the NTS can also be systematically evaluated. And that is exactly what the BfR scientists at the German Centre for the Protection of Laboratory Animals (Bf3R) have done in a study conducted in the third year of the database’s existence.

Animal experiments for the combat against diseases

Number of planned animal experiments per research purpose (evaluation of AnimalTestInfo entries 2014/2015)

Other diseases

2015:
980
2014:
748

Cancer/non-malignant tumours

2015:
533
2014:
419

Cardiovascular diseases

2015:
302
2014:
236

Diseases of the nervous system

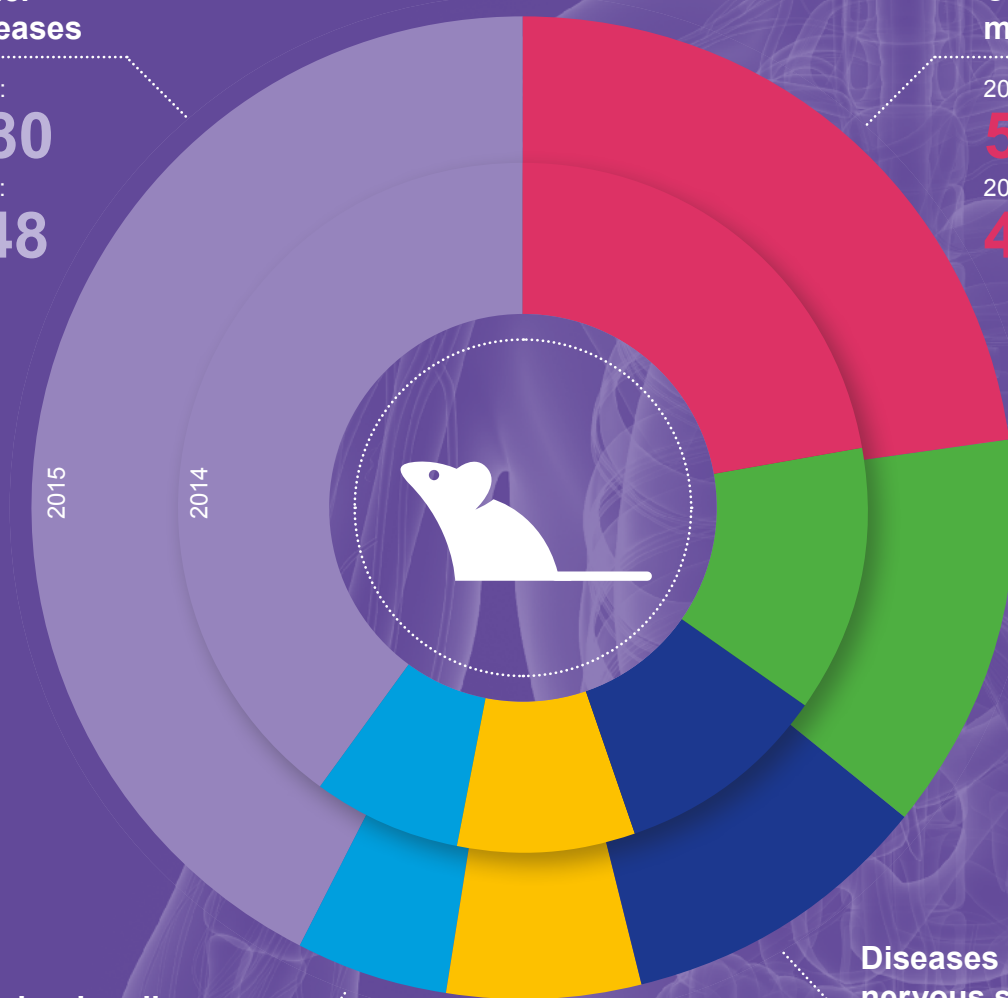
2015:
240
2014:
186

Infectious and parasitic diseases

2015:
144
2014:
156

Endocrine diseases, nutritional and metabolic diseases

2015:
120
2014:
128



© Backgroundimage: sciencepics/shutterstock.com, Mouse: AnonimS/shutterstock.com

“The exemplary evaluation of 5,000 test projects from the years 2014 and 2015 shows that around 80 percent of the animal experiments approved in Germany serve the purpose of investigating the causes, diagnosis and treatment of human illnesses, with main focus on diseases of the cardiovascular and nervous systems, as well as cancer.”

ICD codes as a classification reference

More than 5,000 animal experiments from the years 2014 and 2015 have been systematised with the help of ICD codes. To do so, the experiment purposes described in the NTS were assigned to the corresponding human diseases using the ICD code. The ICD (International Classification of Diseases) code is a classification system used for the precise description of disease diagnoses. For example: an NTS published in 2015 describes an animal experiment examining whether chronic intestinal inflammation increases the risk of colorectal cancer. The plan of the experiment is to switch off some specific enzymes in mice and to transfer certain defence cells. The experiment is intended to help recognise which parts of the immune system and which enzymes contribute to inflammation and cancer. In the Bf3R study, this authorised animal experiment was assigned to the ICD code C15-C26 for malignant tumours of the digestive organs.

More alternative methods required in cancer research

The exemplary evaluation of 5,000 test projects from the years 2014 and 2015 shows that around 80 percent of the animal experiments approved in Germany serve the purpose of investigating the causes, diagnosis and

treatment of human illnesses, with main focus on diseases of the cardiovascular and nervous systems, as well as cancer. As the ICD codes deliver a very precise description, the evaluation shows in detail which diseases are researched with animal experiments. Where cancer is concerned, for instance, a great number of the authorised animal experiment projects in this field was dealing with malignant tumours of the digestive system and therapeutic treatment thereof.

In the study, for the first time the concrete fields of research were determined in which a consistently large number of animal experiments were approved over the years, such as the research and treatment of colorectal cancer. The information obtained from the database shows the fields of research in which there is a special need for the development of alternative methods to experiments with animals in line with the 3R principle. The information serves science, research funders and politics as a comprehensive data source opening up areas of action for more animal welfare in the future. ■

More information:

Bert et al. 2017. Rethinking 3R strategies: Digging deeper into AnimalTestInfo promotes transparency in in vivo biomedical research. PLoS Biol. 15 (12): e2003217. (Open Access)

Schönfelder et al. 2015. Laboratory animals: German initiative opens up animal data. Nature. 519: 7541, 33.

Areas of competence of Bf3R

1

Centre for Documentation and Evaluation of Alternative Methods to Animal Experiments (ZEBET)



2

Reduction of severity and improvement of animal welfare



3

Alternative methods in toxicology



4

National committee for the protection of animals used for scientific purposes



5

Coordination of the promotion of research on alternative methods



The German Centre for the Protection of Laboratory Animals (Bf3R) at the BfR

For the first time, the Centre combines the various areas of alternative method research on a national level in line with the 3R principle. The Centre coordinates activities all over Germany with the goals of restricting experiments with animals to a level which is absolutely necessary and affording laboratory animals the best possible protection. In addition to this, impetus is to be given to national and international research activities through the work of the Centre while encouraging scientific dialogue at the same time. Bf3R was established in 2015 in the course of the Animal Welfare Initiative of the Federal Ministry of Food and Agriculture. It is an integral component of the BfR which is subdivided into five areas of competence. The AnimalTestInfo database belongs to Area 1, Centre for Documentation and Evaluation of Alternatives to Animal Experiments (ZEBET).

