

Counted: Animal Experiments in the Context of the Coronavirus Pandemic

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Animal testing is essential for researching the coronavirus and developing new therapies. Scientists from the German Centre for the Protection of Laboratory Animals (Bf3R) at the German Federal Institute for Risk Assessment (BfR) have now determined the extent to which laboratory animals were used for coronavirus research. As they report in the scientific journal "Embo Reports" (<https://www.embopress.org/doi/10.15252/embr.202153751>), 61,389 laboratory animals were approved for 102 research projects in Germany in the first 17 months of the pandemic. This corresponds to 2.1 percent of projects approved during this period (total of 4,893 projects) and 0.8 percent of all animals approved for use in scientific procedures.

In 2018, some 7.2 million animals in Germany were approved for research; in 2019 it was 7.7 million. During the coronavirus pandemic, this number fell to 5.8 million in 2020. The projection for 2021 currently estimates a further decrease to 4.7 million laboratory animals. The BfR's evaluation is based on the freely accessible database www.animaltestinfo.de. Scientists can use it to disseminate information about their planned animal experiments in a generally understandable way. It is legally required to make an entry in the database.

At 89.5 percent, mice make up the majority of laboratory animals used for coronavirus research, they are followed by hamsters (7.3 percent), rats (1.5 percent), guinea pigs (1.2 percent), ferrets (0.3 percent), monkeys (0.06 percent) and domestic pigs (0.05 percent). These numbers are surprising because normal laboratory mice cannot become infected with SARS-CoV-2. The coronavirus first binds to the ACE2 protein anchored in the cell membrane. In mouse cells, however, this bond is much weaker than in human cells, meaning that mice usually do not become ill. However, the animals are suitable as a model for SARS-CoV-2 research under certain conditions, such as after genetic changes of the mouse or virus. In addition, vaccines can also be tested on mice, even if they are not susceptible to illness.

Hamsters are well suited for coronavirus research. They experience infection in a similar vein to humans. They are therefore particularly important in vaccine development. Accordingly, the number of research projects with hamsters has tripled. Ferrets can also be used as they allow the transferability and disease mechanisms of SARS-CoV-2 to be studied very well. Experiments with primates do not play a major role in Germany.

The authors of the study view the database with its project summaries as being an important tool for discovering trends in science and at the same time ensuring transparency in animal experiments. This serves both research and the public alike.

Further information on the subject from the BfR website

German Centre for the Protection of Laboratory Animals (Bf3R):

https://www.bfr.bund.de/en/german_centre_for_the_protection_of_laboratory_animals.html



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About the Bf3R

The German Centre for the Protection of Laboratory Animals (Bf3R) was founded in 2015 and is an integral part of the German Federal Institute for Risk Assessment (BfR). It co-ordinates activities nationwide with the goals of restricting animal experiments to only those which are considered essential, and guaranteeing the best possible protection for laboratory animals. Moreover, it intends to stimulate research activities and encourage scientific dialogue.

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. The BfR advises the Federal Government and the States ('Laender') on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks.

This text version is a translation of the original German text, which is the only legally binding version.