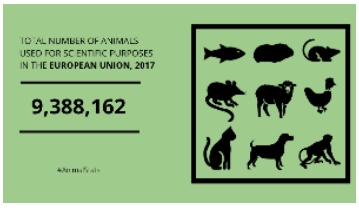
European Animal Research Association

**EARA News Digest 2020 - Week 7**

*Welcome to your Monday morning update, from EARA, on the latest developments in biomedical science, policy and openness in animal research in Europe and around the world.*

## Policy

# Publication of EU-wide figures on animals used in science welcomed by research sector




EARA has welcomed the publication of the first comprehensive statistics, from across the European Union (EU) on all uses of animals in scientific, medical and veterinary research.

The headline figures in the Commission report show that the total number of animals used in the EU in 2017 was 9,388,162.

More than 92% of the total were mice, fish, rats and birds, whereas dogs, cats and monkeys, account for around 0.25% of the total.

EARA executive director, Kirk Leech, said: "Using animals as a research model is often the only way to develop new treatments and an understanding of the human body, and we congratulate the European Commission for making these numbers public."

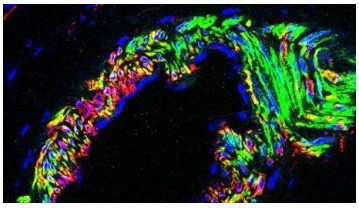
Separate figures were also produced to record the number of animals that were bred but not

used in experiments, which was 12,597,816 across the EU.

There was also a figure for animals used for the creation and maintenance of genetically altered animal lines (1,276,587).

## Research

### Monkey study gives insights into how ovaries age



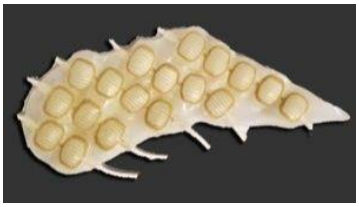
Researchers from the USA and China have uncovered how ovaries age in monkeys, with the potential for helping treat infertility and age-associated ovarian diseases in humans.

Comparing ovarian cells from young and old monkeys, scientists observed changes in gene function related to cell division and age-related stress in cells.

Genes fighting this cellular stress became less active in older ovarian cells, leading to damage and impaired function. The scientists then observed similar effects with age in humans.

Two key genes related to the stress showed decrease function with age in the monkeys and suggesting that these genes could play a key role in protecting ovarian cells from ageing.

## Policy



# ‘Bionic heart’ could mean improved testing of cardiac devices

US engineers have developed a ‘bionic heart’ (biorobotic hybrid heart), which could reduce the amount of animal testing needed in this field of research.

The device recreates the complex contractions of a real heart and could be used to help test cardiac devices such as prosthetic heart valves.

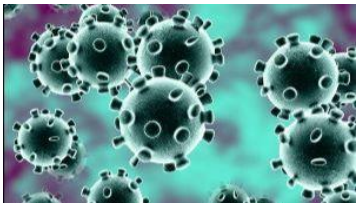
The bionic heart, constructed at the Massachusetts Institute of Technology (MIT), is made from a pig heart with the muscle removed, plus highly-accurate artificial muscles made from thin air tubes plus a series of inflatable pockets.

Current cardiac devices have to be tested in simple simulators and animal subjects, before reaching human trials, but don’t capture the heart’s complexity.

The authors of the study claim this new bionic heart model should be a more realistic and durable environment to test cardiac devices.

Institutions also collaborating on the project were Nanyang Technology University, Singapore, the Royal College of Surgeons, Dublin, Ireland, Boston’s Children’s Hospital, Harvard Medical School, and Massachusetts General Hospital, USA.

Research



# Animal testing plays part in the race to find a vaccine for coronavirus

As the Chinese coronavirus spreads, scientists around the world are working non-stop to find a vaccine and animal models are a vital part of the research process.

Vincent Munster of the US National Institute of Allergy and Infectious Diseases said that his lab's first priority was to identify the type of animals that experience the infection in a similar way to humans.

He told *Nature* they plan to look at a mouse genetically engineered to contain a human version of the receptors that the SARS virus and the new coronavirus use to infect cells.

Future work could involve exposing mice and, later, non-human primates to the virus and testing whether vaccines can prevent infection.

In the UK, researchers at the Imperial College London and Oxford University are currently developing a vaccine that they will test in animals in the next few days.

"We have successfully generated our novel coronavirus vaccine candidate in the lab – just 14 days from getting the genetic sequence to generating the candidate." said Imperial's Robin Shattock (listen to the full audio interview).

But in a *Guardian* article, Peter Hotez, of Baylor University, Texas, USA, who was involved in the

search for a SARS vaccine, warned that the problem was not making a vaccine, but the time it takes for safety-testing and licensing the product.

“The problem is that is even after manufacturing a vaccine, you still have to go through the safety testing on humans – clinical trials as well as formal toxicology testing in animals. It’s hard to rush and that’s where you tend to get a bottleneck,” he said.

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