Stemnovate in animal cell first

By Paul Brackley
paul.brackley@iliffemedia.co.uk

Stemnovate has created neurons from the skin cells of dogs, cats and horses in what is thought to be a world first.

The Babraham Research Campus company revealed to the *Cambridge Independent* that it has been developing the models for more than a year and a half for projects with a leading pharmaceutical company.

Its work on the animal cell models, and on human cell models, provide valuable alternatives to the testing of new drugs on live animals.

Stemnovate used cell reprogramming techniques to turn skin cells into pluripotent stem cells using self-renewal genes before inducing them to create functional cells, such as brain cells.

CEO Dr Ruchi Sharma said: "To develop new medicines, pharmaceutical companies must progress potential drug candidates from preclinical to clinical testing on humans. But, before that, they must demonstrate safety by testing two different animal species.

"The studies on the failed 90 per cent of drug molecules showed that animal studies could not predict safety due to species differences.

"The animal industry requires alternative models to develop better veterinary medicines and understand animal diseases."

She added: "In 2021, there were 3.1 million completed procedures involving living animals in Great Britain.

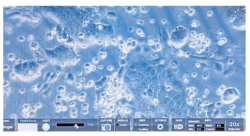
"Stemnovate's aim is to provide stem cell-based novel technologies through its industrial platform so that drug discovery becomes faster, while ensuring better safety and reducing animal testing.

"As a team, we feel excited to develop such industrial applications successfully for the first time in the world.

"We have a strong pipeline of industrial projects where we are creating multi-species stem cell models."

Dr Ruchi Sharma, CEO of Stemnovate, where neuron cells for multiple animal species have been created that could be used in drug development

Picture: Keith Heppell



In 2014, Dr Sharma published the first study demonstrating that functional neurons could be derived from the skin cells of a young horse by turning them first into stem cells using the technique, which was originally developed elsewhere for human cells.

The reprogrammed cells, being pluripotent, can be induced to become any cell type.

Arm Virtual Hardware has early successes

Arm is making significant progress since it radically simplified and accelerated software design for IoT, and embedded devices with the introduction of Arm Virtual Hardware a year ago.

Multiple cloud-based AI and IoT toolchains have already integrated Arm Virtual Hardware directly into their offerings, meaning developers can start sooner, test at scale, and bring their innovation to market faster.

The Cambridge chip design company has also announced new partnerships. Arm Virtual Hardware has been integrated with GitHub Actions, enabling faster time to market for IoT and embedded developers. With over 90 million developers, GitHub is at the centre of the evolution of modern software development.

AI development companies Qeexo and Nota have also integrated Arm Virtual Hardware for better accessibility and ease-of-deployment of ML (machine learning) workloads.

"Arm is committed to ensuring developers have the tools they need in the places they are innovating," said Paul Williamson, SVP and GM, IoT line of business, Arm.