

Scientists in Australia build human lungs in dish to test medicines

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Mini lungs could replace animal testing and boost success in clinical trials

Scientists at the University of Sydney, Australia with collaborators from Australia, South Korea and China, have developed a step-by-step blueprint to create advanced human lung models in the lab, which they say will accelerate the discovery and development of new drugs and reduce reliance on animal testing.

Lab-made lungs, known as organoids or mini organs, are 3D structures grown from human primary cells that mirror real organs in the body. They serve as a testing ground for biomedical research.

Senior author Professor Wojciech Chrzanowski, Professor of Nanomedicine in the Sydney Pharmacy School, Faculty of Medicine, and member of the Charles Perkins Centre, said: "This work is significant because we will be able to reduce the number of animals in medical research and accelerate the discovery of new drugs or innovative strategies to treat diseases."

Australia banned cosmetic testing on animals in 2020, and last year the United States passed legislation ending a requirement for new drugs to be tested on animals.

Development of these lung models brings Australia to the forefront of mini organ research, said Professor Chrzanowski, who has been calling for the establishment of a national centre for medical research alternatives to animal methods.