Question for written answer E-000542/2023
to the Commission
Rule 138
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Subject: Pushing for organs-on-chips and reconstructed skin models to replace animal testing

‘Organs-on-chips’ use cells grown in vitro to reconstruct tissues or miniature organs that simulate human physiology and diseases. In other words, they imitate human organs with their nerve endings and blood vessels, with tubing and pumps even reproducing the circulatory system.

The first experiments involved a ‘lung-on-chip’ that mimicked the barrier function between the pulmonary alveoli and blood capillaries – the tiny, thin-walled vessels that connect the arteries (which send blood out of the heart) and veins (which send it back to the heart).

One company also developed a 3D skin model to simulate skin allergies. As could be expected, the samples derived from human skin are of far greater interest than the animal models.

This technique is particularly relevant to toxicology, with the results being as close as possible to those observed in humans.

1. Is the Commission following this research?

2. Would it push for some animal tests to be replaced with this new method?

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