Question for written answer E-000453/2023
to the Commission
Rule 138
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Subject: Developing the simulation of neurological mechanisms to improve treatments and replace animal testing

In neurological mechanism simulations, computational models are applied to the human brain. The simulations have to contend with the enormous complexity of neuronal connections. And yet, they have become increasingly reliable thanks to developments in cerebral imaging systems. A neurological model can now be developed using an MRI scan of a patient's brain. The technology therefore opens up a number of possibilities for treating conditions such as epilepsy, for which current treatments are considered to be unsatisfactory and animal testing has proven to be ineffective.

In 2018, the Epinov project launched a simulation that optimises surgical strategies by modelling the abnormalities that trigger epileptic seizures and by providing healthcare professionals with a model of the patient's epileptogenic zone. After pilot studies confirmed the relevance of this 'virtual brain', clinical trials began in July 2019. Initial results are promising and the technology will only improve in the future.

Does the Commission support the development of other neurological mechanism simulation projects, given the technology's potential to improve treatments and replace animal testing?

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