

Press release



Innovative drug screening system in prize-winning research into pain relief

Using a pioneering screening system, a team of Rostock-based researchers has made an important contribution to the development of new pain relief drugs. Professor Weiss of Rostock University's Institute of Biosciences and colleagues Dr. Alxeandra Gramowski and Dr. Olaf Schröder from the company NeuroProof GmbH used neurochip technology to test new substances related to the opioid peptides produced naturally by the body. In the course of their research they found a substance that very likely has an analgesic (pain relieving) effect never obtained before.

In recognition of their efforts, Prof. Weiss, Olaf Schröder and other members of a Europe-wide research consortium received the Polish Academy of Sciences' Professor Miroslaw Mossakowski Medal. The prize was presented by the head of the Permanent Representation of the Republic of Poland at the European Union in Brussels. It was awarded "for outstanding achievements and lasting contributions to the development of new therapeutic substances and strategies for the treatment of pain in patients in the advanced stages of cancer."

The new assay was designed to evaluate the way in which substances work on various pain receptors in the body in the hope that this could lead to a greater analgesic effect. The scientists used living nerve cells cultivated on a chip for several months to identify the typical electrical activity patterns responsible for pain relief in known pain medications and then compared these to the mode of action of the new substances that had been developed by the project partners.

Olaf Schröder: "We are delighted to have been awarded this prize as it acknowledges results obtained using our innovative MEA neurochip technology and confirms that our approach is the right way to go." NeuroProof GmbH, a spin-off of the University of Rostock, provides screening services to investigate and analyse the complex effects of chemical substance on brain function and that of the entire central nervous system (CNS). The technology was established and developed within research projects carried out by the University of Rostock. The insights it provides enable the effects of potential new drugs on the CNS and possible neurotoxic effects to be predicted at an early stage, which can significantly accelerate the development of CNS drugs during the pre-clinical phase, remove the need for animal experiments and save money.

NeuroProof GmbH is the world leader in the cultivation of primary neuron-glia co-cultures on MEA neurochips. Using this technology, specific nerve tissue taken from mouse foetuses can be kept alive for a period from days to many weeks. MEA neurochips record the electrical patterns of the action potentials of individual nerve cells in a complex network, and the resulting data is analysed using proprietary pattern recognition methods.

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