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Brigitte Kieffer
USIAS Paul Ehrlich Chair (2022-2024)

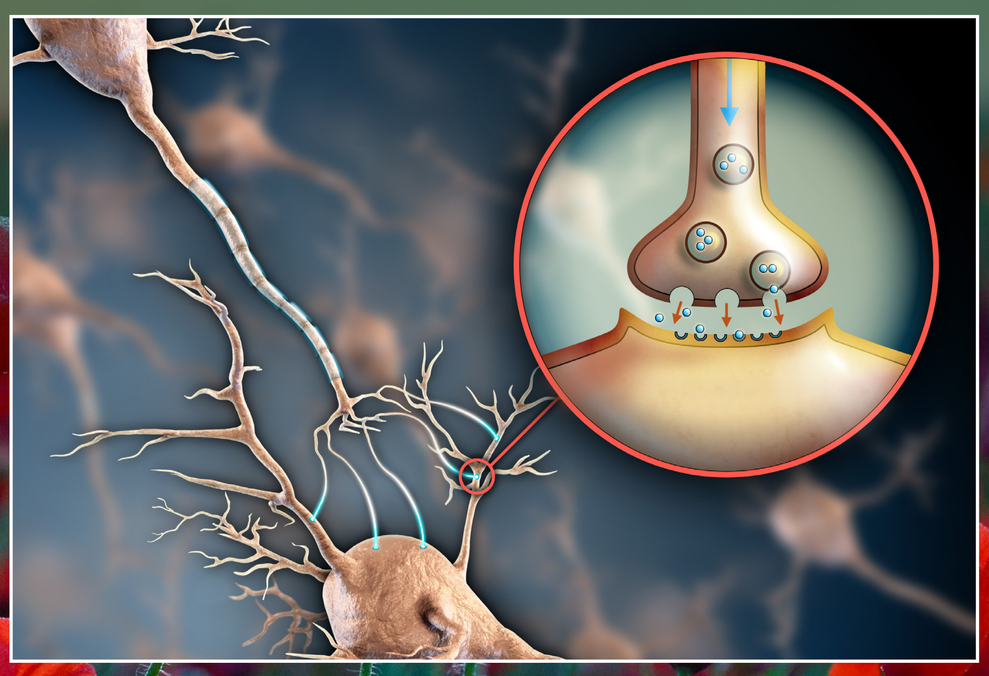
Brigitte Kieffer is a research director at the French National Institute of Health and Medical Research (Inserm) at the Strasbourg Centre for Biomedical Research (CRBS). Her work on opiate receptors paved the way to understanding both the pain-relieving and the addictive effects of substances such as morphine. She has been awarded the Paul Ehrlich Chair in life sciences at the University of Strasbourg Institute for Advanced Study (USIAS), a position which was created in 2022 to recognize Strasbourg-based researchers who have made an exceptional contribution to their field.

Brigitte Kieffer and her group isolated the first gene encoding an opioid receptor, opening an entire research field towards understanding the molecular basis of opioid-controlled behaviours. The research demonstrated that both the unrivalled pain-killing properties of morphine, and its reward properties and strong addictive potential, are mediated by the mu opioid receptor.

Her group also discovered that another opioid receptor, the delta opioid receptor, improves anxiety and depressive-like responses, leading delta agonists into clinical trials to treat major depressive disorders. Her work has important implications for research on pain, addiction and mood disorders, and more broadly for neurosciences and psychiatry.

In her view, it is essential to reduce the gap between neuroscience and mental health, and improving the dialogue and connections between neuroscience and psychiatry will be one of the major next steps in her field. A psychiatric pathology is defined by complex psychological criteria, based in particular on analysis of the patient's behaviour and feelings; but behind these criteria lie brain dysfunctions that may be very different from case to case. Unfortunately, there are no biological criteria for defining mental illness. And yet, the discovery of biological markers would greatly help in the development of effective new drugs, and in personalising therapeutic approaches.

"Good exploration is when, more than just understanding how neurons work as cells, we try to grasp the complexity of their connectivity with all of the neural networks in the brain. In the field of neurobiology, one can work at the molecular level (genetic, epigenetic), at the neural level (cell signalling, physiology) or at the systematic level (brain, behaviour), and the greatest challenge is to integrate all of this information. It requires collaboration between disciplines that are very different."



The Paul Ehrlich Chair in the life sciences was created in 2022 for Strasbourg-based researchers who have made an exceptional contribution to their field. The Chair is named in honour of Paul Ehrlich (1854-1915), a German physician and scientist who studied in Strasbourg and is widely recognized for his research on haematology, immunology and pharmacology. Known as the father of chemotherapy, he was awarded the 1908 Nobel Prize in Physiology or Medicine for his contributions to immunology.

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