



Curriculum Vitae Professor Dr Tamás F. Freund

Name: Tamás F. Freund

Date of birth: 14 June 1959

Research Priorities: Information processing in the brain, neuronal circuits, memory formation, GABAergic interneurons, cannabinoid receptors

Tamás F. Freund is a neuroscientist. His research is focused on how the brain processes and stores information and how the memory works. He discovered cell types and circuits in the brain whose dysfunctions may be linked to the development of diseases.

Academic and Professional Career

- since 2002 Director, Institute of Experimental Medicine, Hungarian Academy of Sciences (MTA), Hungary
- since 2000 Head, Department of Neuroscience, Pázmány Péter Catholic University, Budapest, Hungary
- 1994 - 2002 Deputy Director, Institute of Experimental Medicine, MTA, Hungary
- 1992 PhD in Biology, MTA, Hungary
- since 1990 Head, Department of Functional Neuroanatomy, Institute of Experimental Medicine, MTA, Hungary
- 1986 - 1989 Research Fellow, MTA, Department of Anatomy, Faculty of Medicine, Semmelweis University, Budapest, Hungary
- 1986 - 1988 Senior Research Fellow, Neuropharmacology, MRC Anatomical Neuropharmacology Unit, Department of Pharmacology, Oxford University, Oxford, UK
- 1986 Third Degree "Candidate" of Biological Science, MTA, Hungary
- 1985 Research Fellow, Department of Experimental Psychology, Oxford University, Oxford, UK

- 1984 Doctorate, Eötvös Loránd University (ELTE), Budapest, Hungary
- 1983 - 1986 Junior Research Fellow, MTA, Department of Anatomy, Semmelweis University, Budapest, Hungary
- 1982 - 1983 Research Associate, Herbert von Karajan Neuroscience Research Trust, Department of Pharmacology, Oxford University, UK
- 1983 B. Sc. in Biology, ELTE, Budapest, Hungary

Functions in Scientific Societies and Committees

- since 2020 President, Hungarian Neuroscience Society, Hungary
- 2013 - 2014 Member, Science and Technology Advisory Council, President, European Commission
- 2009 - 2013 President, Hungarian Neuroscience Society, Hungary
- since 2008 Section Editor, Editorial Board, European Journal of Neuroscience
- since 2006 Member, Editorial Board, Brain Structure and Function
- since 2006 Member, Editorial Board, Journal of Chemical Neuroanatomy
- 2004 - 2006 President, Federation of European Neuroscience Societies (FENS)
- since 2002 Member, Editorial Board, Experimental Neurology
- 2000 - 2003 Chairperson, Quality of Life Committee, Hungarian Research and Development Programme, Ministry of Human Resources, Hungary
- 1999 - 2004 Chairperson, Central and Eastern European Regional Committee, International Brain Research Organization (IBRO)
- since 1998 Member, Editorial Board, European Journal of Neuroscience
- 1998 - 2004 Member, Executive Committee, IBRO
- since 1997 Chairperson, Neuroscience Committee, MTA, Hungary
- since 1993 Member, Executive Committee, Hungarian Neuroscience Society, Hungary
- since 1994 Section Editor, Hippocampus
- since 1992 Member, Editorial Board, Journal for Brain Research, Experimental Brain Research, Neurobiology
- since 1991 Member, Editorial Board, Neuroscience

Project Coordination, Membership in Collaborative Research Projects

- 2007 - 2011 Integrated Project, EPICURE, 6th Framework Programme for Research (FP), European Union (EU)
- 2005 - 2009 Integrated Project, GENADDICT, 6th FP, EU
- 2003 - 2006 Philip Morris External Research Program Grant, Philip Morris International Inc. (PMI), New York City, USA
- 1998 - 2000 James S. McDonnell Foundation, Saint Louis, USA
- 1996 - 1997 Volkswagen Foundation, Hanover, Germany
- 1994 - 1997 Swiss National Science Foundation, Switzerland
- 1993 - 1997 Research Grant, Finnish Academy of Sciences, Finland
- 1991 - 1998 Human Frontier Science Program Organization (HFSP), Strasbourg, France
- 1989 - 1990 Fidia Research Foundation Neuroscience Award Lectures, Fidia Research Foundation, Abano Terme, Italy

Honours and Awarded Memberships

- 2012 Környei Memorial Award, Környei Society, University of Pécs, Pécs, Hungary
- 2011 Brain Prize (joint award with Péter Somogyi and György Buzsáki), Grete Lundbeck Foundation, Valby, Denmark
- 2011 Hungarian Order of Merit, Hungary
- 2009 Pro Doctorandis Prize, Hungarian Medical Students' Association (HuMSIRC), Hungary
- 2008 Prima Primissima Award, Sándor Csányi, OTP Bank, Budapest, Hungary
- 2007 Kavli Distinguished International Scientist Lecture, Society for Neuroscience (SfN), Washington D.C., USA
- 2007 Scientist of the Year, Prize for Hungarian Science Journalists, Hungary
- 2007 Semmelweis Award, Semmelweis Medical School, Budapest, Hungary
- 2006 - 2010 Howard Hughes Medical Institute International Research Scholar Award, Howard Hughes Medical Institute, Chevy Chase, USA
- 2005 Széchenyi Prize, President, Hungary
- since 2004 Full Member, MTA, Hungary
- 2003 Honoris Causa Pro Scientia Gold Medal, MTA, Hungary
- 2002 ISI Most Cited 250 in Neuroscience

- since 2001 Member, German National Academy of Sciences Leopoldina, Germany
- 2001 - 2005 Howard Hughes Medical Institute International Research Scholar Award, Howard Hughes Medical Institute, Chevy Chase, USA
- since 2000 Member, Artium Europaea
- since 2000 Member, Academia Scientiarum
- since 2000 Member, Academia Europaea
- 2000 Bolyai Prize, Bolyai Prize Foundation, Hungary
- 1999 Ábrahám Ambrus Award, József Attila University, Szeged, Hungary
- 1998 - 2004 Corresponding Member, MTA, Hungary
- 1998 Dargut and Milena Kemali Foundation Prize, FENS Forum, Berlin, Germany
- 1998 Krieg Cortical Kudos Cortical Discoverer Award and Cajal Medal of the Cajal Club, American Association of Anatomists (AAA), USA
- 1997 Academy Award, MTA, Hungary
- 1995 - 2000 Howard Hughes Medical Institute International Research Scholar Award, Howard Hughes Medical Institute, Chevy Chase, USA
- 1992 Swammerdam Lecture, Brain Research Institute, Amsterdam, The Netherlands
- 1991 Krieg Cortical Kudos Cortical Explorer Award and Cajal Medal, Cajal Club of the AAA, USA
- 1991 Award, Drs. C. and F. Demuth Swiss Medical Research Foundation, Switzerland

Research Priorities

Tamás F. Freund is a neuroscientist. His research is focused on how the brain processes and stores information and how the memory works. He discovered cell types and circuits in the brain whose dysfunctions may be linked to the development of diseases.

Tamás F. Freund is researching the structure and organisation of neuronal circuits in the hippocampus. The hippocampus is part of the cerebral cortex. It is involved in memory formation and is one of the few regions of the brain where new nerve cells can be formed throughout one's life. Tamás F. Freund has been able to significantly reveal the structure and function of cortical microcircuits in the hippocampus. He discovered three novel inhibitory cell types in the hippocampus. These switch neurons (GABAergic interneurons) have an inhibitory effect on other interneurons via gamma-aminobutyric acid (GABA) as a transmitter. GABA is the most important inhibitory transmitter in the brain. In further studies he has been able to show similar GABAergic transmission pathways in other regions of the brain. A disturbance of this "inhibitory switch" is involved in the development of several diseases or disorders such as epilepsy and anxiety. In his

research Tamás F. Freund has been able to demonstrate links between the mechanisms in the hippocampus and the development of disease.

He and his team discovered that CB1 cannabinoid receptors are located on the so-called basket cells, a subgroup of GABAergic interneurons. The psychoactive compound of the cannabis plant targets these receptors and inhibits the release of neurotransmitters. His work can help to explain how certain behaviours are related to cortical microcircuits and how dysfunctions can lead to disorders such as anxiety disorders. With his research Tamás F. Freund wishes to further investigate how emotions and behaviours are determined by activity patterns involved in the formation of memory.