

Prof. Dr. Rainer Spanagel



Full professor, Scientific Director Institute of Psychopharmacology, Central Institute of Mental Health, Medical Faculty Mannheim, Heidelberg University

Personal information and contact

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1 Education

1989 Diploma Neuropharmacology, Max Planck Institute of Neuropharmacology Martinsried, Germany
1991 Ph.D., Neuropharmacology, Max Planck Institute of Neuropharmacology (Prof. Albert Herz) Martinsried, Germany
1996 Habilitation, Pharmacology & Toxicology (Prof. Wolfgang Forth) University of Munich, Germany

2 Academic positions

1991-1995 Scientific assistant at the Max Planck Institute of Psychiatry, Munich (Prof. Florian Holsboer), Germany
1995–1999 Head of the Research Group “Drug Addiction” at the Max Planck Institute of Psychiatry, Munich, Germany
1999 Professor for Psychopharmacology at the University of Heidelberg, Germany
2000 Department Head of Psychopharmacology at the CIMH, Mannheim, Germany
2006 W3 Professor and member of the Board of Directors at the Central Institute of Mental Health (CIMH), Mannheim, Germany
2011 Scientific Director of the Institute of Psychopharmacology

3 Research interests

Addiction research - animal models for psychiatric disorders; especially for addiction and borderline personality - chronic pain - concept of neuronal ensembles - translational multi-modal neuroimaging - circadian system - drug development for psychiatry disorders - systems medicine approaches - in silico pharmacology.

4 Miscellaneous

Memberships

Scientific Advisory Board EMCCDA in Lisbon (2014-2018)

Executive member of the Society of Studies on Addiction (SSA), European Behavioural Pharmacology Society (EBPS), International Society of Biomedical Research on Alcoholism (ISBRA), and Scientific Advisory Board of the European Colleague on Neuropsychopharmacology (ECNP).

Member of F1000 (Pharmacology Section)

Editorial functions

Editor-in-Chief of Addiction Biology (since 2005)

Editor-in-Chief of In silico Pharmacology (from 2012 on)

Associate Editor of Frontiers in Behavioral Neuroscience (since 2009), Frontiers in Genetics (since 2011), and Substance Abuse and Rehabilitation (since 2010).

Member of the Editorial Boards of Addiction (2003-2009), Alcoholism Clinical and Experimental Research (since 2003), Behavioural Brain Research (since 2011), Journal of Neurochemistry (since 2014), International Journal of Neuropsychopharmacology (from July 2015 on)

Coordination and organization

Coordinator of the German Research Network on Genetics of Alcoholism (NGFN)

Coordinator of the German Research Network on Systems Medicine in Alcohol Addiction (e:Med)

President of the International Society on Biomedical Research on Alcohol (ISBRA 2016-2018)

Organizer of the World Congress on Alcohol Research in Berlin (2016)

Honors and awards

1998 Wilhelm Feuerlein Award for Alcohol Research

2003 Sir Hans Krebs Award

2005 Albrecht-Ludwig-Berblinger Award

2008 James B. Isaacson Award

2010 Reinhart-Koselleck-Award, DFG

2011 AGNP Award for Excellence in Psychopharmacology

2015 NEATOR Award from American College of Neuropsychopharmacology

2016 ISBRA Award

5 Grant support since 2011

MWK AG Translationale Suchtforschung, 2011-2016

DFG SP 383/5-1 Reinhart-Koselleck Innovationgrant: "Multimodal optMRI approaches to study reward processes", 2011-2016

DFG SFB 636 TP B1 "Reconsolidation of alcohol-associated memories: From underlying cellular mechanisms to translational intervention strategies", 2012-2015

DFG SFB 1134/1 B05 "Characterization and modulation of neuronal ensembles of the reward system", 2015-2018

DFG SFB 1134/1 C03 "Calcium-induced changes in expression of co-active neurons of the ventral tegmental area during conditioned nicotine sensitization", 2015-2018

DFG SFB 1158 TP B04 "Translational studies in chronicity of pain: Neuroplasticity in corticolimbic dopamine and glutamate pathways", 2015-2019

- DFG KFO 256: SP 383/10-1 “Mechanisms of Disturbed Emotion Processing in Borderline Personality Disorder: (IP7) Neurobiological Consequences and Mechanisms of Early Social Rejection Experiences as an Animal Model”, 2015-2018
- EU ERA-Net NEURON: Cocaine addiction: a translational study to identify and characterize dysfunctional neural networks, 2014-2017
- EU SyBil-AA in Horizon 2020: Systems biology of alcohol addiction: Modelling and validating disease state networks in human and animal brains for understanding pathophysiology, predicting outcomes and improving therapy, 2016-2020
- BMBF NGFNPlus: Genetics of Alcohol Addiction /Subproject 1: Coordination of the Consortium, 2011-2014
- BMBF NGFNPlus: Genetics of Alcohol Addiction /Subproject 8: Behavioral analysis of animal models, 2011-2014
- BMBF Bernstein Center for Computational Neuroscience Project: In-silico neuropharmacology, 2010-2015
- BMBF e:Med: Alcohol Addiction - A Systems-Oriented Approach/Subproject 1: Coordination of the Consortium, 2014-2016
- BMBF e:Med: Alcohol Addiction - A Systems-Oriented Approach/Subproject 5: Central Resource IV: Animal model of alcohol addiction, 2014-2016
- BMBF e:Med: Alcohol Addiction - A Systems-Oriented Approach/Subproject 11: Functional Validation III: Functional local network activity and neurotransmitter release, 2014-2016
- BMBF *Forschungsnetz zu psychischen Erkrankungen*: Addiction: Early Recognition and Intervention Across the Lifespan (AERIAL) TP 6: Mechanisms of addiction: social exclusion, risk and resilience prediction, and adapted interventions, 2015-2019

6 Ten important peer-reviewed publications

- Spanagel R, Herz A, Shippenberg TS (1992) Opposing tonically active endogenous opioid systems modulate the mesolimbic dopaminergic pathway. **Proc Natl Acad Sci USA** 89:2046-50
- Timpl P, Spanagel R, Sillaber I, Kresse A, Reul JM, Stalla GK, Blanquet V, Steckler T, Holsboer F, Wurst W (1998) Impaired stress response and reduced anxiety in mice lacking a functional corticotropin-releasing hormone receptor 1. **Nat Genet** 19:162-166
- Sillaber I, Rammes G, Zimmermann S, Mahal B, Ziegglänsberger W, Wurst W, Holsboer F, Spanagel R (2002) Enhanced and delayed stress-induced alcohol drinking in mice lacking functional CRH1 receptors. **Science** 296:931-33
- Abarca C, Albrecht U, Spanagel R (2002) Cocaine sensitization and reward are influenced by circadian genes and rhythm. **Proc Natl Acad Sci USA** 99:9026-30
- Spanagel R, Pendyala G, Abarca C, Zghoul T, Sanchis-Segura, Magnone MC, Lascorz J, Depner M, Holzberg D, Soyka M, Schreiber S, Matsuda F, Lathrop M, Schumann G, Albrecht U (2005) The circadian clock gene *Period2* alters the glutamatergic system and thereby modulates alcohol consumption. **Nat Med** 11:35-42
- Engblom D, Sanchis-Segura C, Bilbao-Leis A, Dahan L, Perreau-Lenz S, Balland B, Mameli M, Rodriguez Parkitna J, Parlato R, Sprengel R, Lüscher C, Schütz G, Spanagel R (2008) Glutamate receptors on dopaminergic neurons control the persistence of drug-seeking. **Neuron** 59: 497-508

7. Mameli M, Halbout B, Creton C, Spanagel R, Lüscher C (2009) Cocaine-evoked synaptic plasticity: persistence in the VTA triggers adaptations in the nucleus accumbens. **Nat Neurosci** 12:1036-41
8. Vengeliene V, Leonardi-Essmann F, Marston H, Sommer W, Spanagel R (2010) Glycine Transporter-1 Blockade Leads to Persistently Reduced Relapse-Like Alcohol Drinking in Rats. **Biol Psychiatry** 68: 704-711
9. Schneider M, Kasanetz F, Lynch DL, Friemel CM, Lassalle O, Hurst DP, Steindel F, Monory K, Schäfer C, Miederer I, Leweke FM, Schreckenberger M, Lutz B, Reggio PH, Manzoni OJ, Spanagel R (2015) Enhanced Functional Activity of the Cannabinoid Type-1 Receptor Mediates Adolescent Behavior. **J Neurosci** 35:13975-88
10. Hirth N, Meinhardt MW, Noori HR, Uhrig S, Broccoli L, Perreau-Lenz S, Sommer WH, Spanagel R*, Hansson AC* (2016) Convergent evidence from alcohol dependent humans and rats for a hyperdopaminergic state in protracted abstinence. **Proc Natl Acad Sci U S A** 113:3024-29
*equal contribution