

Prof. U. Benjamin Kaupp, PhD

center of advanced european studies and research (caesar)



center of advanced european studies and research (caesar), Molecular Sensory Systems, Scientific Director and Head of Department

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Research Expertise

Biophysics of sensory systems. Physiology of receptors and ion channels in cellular signaling. Cell motility and chemotaxis. Development of chemical tools for kinetic techniques in cell biology.

Education / Training

University of Osnabrück, Biophysics, Habilitation, 1983 Technical University of Berlin, Chemistry, PhD, 1979

University of Tübingen and Technical University of Berlin Chemistry, Diploma, 1974

Appointments / Positions Held

2010 - 2011

Director of the Max-Planck-Institute for Neurological Research, University of Cologne, Germany

2008 - present

Professor of Molecular Neurobiology, University of Bonn, Germany

2008 - present

Scientific Director of caesar and Head of Department Molecular Sensory Systems, Center of Advanced European Studies and Research

2007 - present

Scientific Member of the Max-Planck-Society, Max-Planck-Society

2000 - present

Whitman Investigator, Marine Biological Laboratory (MBL), Woods Hole, USA

1988 - present

Professor of Biophysical Chemistry, University of Cologne, Germany

2006 - 2009

Director of the International Helmholtz Research School of Biophysics and Soft Matter, Research Centre Jülich

1988 - 2007

Director at the Institute of Neuroscience and Biophysics Research Centre Jülich

1987

Feodor-Lynen-Stipend at the Department of Medical Chemistry, University of Kyoto, Japan

1985 - 1988

Assistant Professor of Biophysics, University of Osnabrück

1982 - 1985

Hochschulassistent, University of Osnabrück

1981

Postdoctoral Fellow, SUNY Stony Brook, USA

Honors / Awards

2013 Member of the North Rhine-Westphalian Academy of Sciences

2005 Member of the "German Academy of Sciences Leopoldina"

1999 Novartis Lecture, University Regensburg

1999 Keynote lecturer on international conferences

1994 Alcon Research Award

1987 Feodor-Lynen-Fellowship

1978 Member of the Academic Senate Technical University Berlin

10 Most Relevant Publications for Prof. U. Benjamin Kaupp

1. Jansen V, Alvarez L, Balbach M, Strücker T, Hegemann P, **Kaupp UB**, Wachten, D. 2015. Controlling fertilization and cAMP signaling in sperm by optogenetics. eLife 4 10.7554/eLife.05161
2. Seifert R, Flick M, Bönigk W, Alvarez L, Trötschel C, Poetsch A, et al. 2015. The CatSper channel controls chemosensation in sea urchin sperm. EMBO J. 34:379-392.
3. Alvarez L, Dai L, Friedrich BM, Kashikar ND, Gregor I, Pascal R, **Kaupp UB**. 2012 The rate of change in Ca²⁺ concentration controls sperm chemotaxis J. Cell. Biol. 196, 653-663
4. Strücker T, Goodwin N, Brenker C, Kashikar ND, Weyand I, Seifert R, **Kaupp UB**. 2011. The CatSper channel mediates progesterone-induced Ca²⁺ influx in human sperm. Nature 471: 382-386
5. Schröder-Lang S, Schwärzel M, Seifert R, Strücker T, Kateriya S, Looser J, Watanabe M, **Kaupp UB**, Hegemann P, Nagel G. 2007. Fast manipulation of cellular cAMP level by light in vivo. Nat. Methods 4: 39-42
6. Strücker T, Weyand I, Bönigk W, Van Q, Loogen A, Brown JE, Kashikar ND, Hagen V, Krause E, **Kaupp UB**. 2006. A K⁺-selective cGMP-gated ion channel controls chemosensation of sperm. Nat Cell Biol 8: 1149-54
7. **Kaupp UB**, Solzin J, Hildebrand E, Brown JE, Helbig A, Hagen V, Beyermann M, Pampaloni F, Weyand I. 2003. The signal flow and motor response controlling chemotaxis of sea urchin sperm. Nat Cell Biol 5: 109-17
8. Körschen HG, Beyermann M, Müller F, Heck M, Vantler M, Koch KW, Kellner R, Wolfrum U, Bode C, Hofmann KP, **Kaupp UB**. 1999. Interaction of glutamic-acid-rich proteins with the cGMP signalling pathway in rod photoreceptors. Nature 400: 761-6
9. Gauss R, Seifert R, **Kaupp UB**. 1998. Molecular identification of a hyperpolarization-activated channel in sea urchin sperm. Nature 393: 583-7
10. **Kaupp UB**, Niidome T, Tanabe T, Terada S, Bönigk W, Stühmer W, Cook NJ, Kangawa K, Matsuo H, Hirose T, et al. 1989. Primary structure and functional expression from complementary DNA of the rod photoreceptor cyclic GMP-gated channel. Nature 342: 762-6