Curriculum Vitae
Assoc. Prof. Dr. Margot Ernst

Personal Data   **Affiliation:**
Date of Birth: December 17th, 1966   Medical University of Vienna
Place of Birth: Vienna, Austria   Center for Brain Research
Nationality: Austria   Spitalgasse 4, 1090 Vienna
Children: Two, born 1996 and 1999

https://www.meduniwien.ac.at/researcher/Margot_Ernst

Main research interests:
I position my research interests in the neurochemical and neurophysiological basics of central nervous system function. My lab mainly studies $GABA_A$ receptor subtype structure, function, and relevance for central nervous system disorders. By means of (*in silico*) structural and *in vitro/ ex vivo* pharmacological techniques we characterize protein ligand interactions and develop new tool compounds for their selective detection or manipulation. We work closely with medicinal chemists and apply computational methods towards structure prediction to generate protein/ ligand interaction hypotheses. We utilize electrophysiological and pharmacological techniques to study recombinantly expressed and native receptors for binding site characterization and ligand SAR studies. The experimental data drives the development of hybrid methods (experimentally guided *in silico* studies) to improve model accuracy for binding sites. In collaborative networks we study the neurophysiology and pathophysiology of specific $GABA_A$ receptor subtypes, employing tool compounds from our own research as well as commercially available tools.

Education and Career History

1992	PhD in Chemistry, Georgia Institute of Technology/ K.-F.- Uni Graz
1992 – 1995	PostDoc; Institute for Theoretical Chemistry; K.-F.- Uni Graz
1995 – 2001	Change of Field, Medical School studies
2001 – 2002	PostDoc in the lab of Werner Sieghart, University of Vienna
2002 – 06/2014	Assistant and Group Leader at the Medical University of Vienna
2005	Discontinued habilitation track due to single parenting, re-assigned mainly to scientific staff duties and teaching / supervision
2011	Resumed habilitation track
2014	Habilitation (venia docendi), Medical University of Vienna
07/2014 – 2017	Assistant Professor (tenure track) at the Medical University of Vienna
2017 – now	Fulfilled tenure, Associate Professor at the Medical University of Vienna

Selected international lectures

2015	Mechanisms of Anesthesia (MAC); Bonn, DE
2016	V Congress of the Russian Biochemical Society; Sochi Russia
2016	GABA Symposium, Royal Danish Society for Sciences and Letters, DK
2017	10th Joint Meeting on Medicinal Chemistry; Dubrovnik, Croatia

Selected Awards
1987-1992   Fulbright Scholarship (for PhD studies in the US)

Selected reviewing or editorial activities
Reviewing for e.g.: Nature Communications, British Journal of Pharmacology, PLOS One, Frontiers Neuroscience series, Acta Pharmacologica Sinica

List of publications

Ten most important publications for the career:

The Benzodiazepine Binding Sites of GABA$_A$ Receptors (Review) Sigel E and Ernst M (2018); *Trends in Pharmacological Sciences.* (in press)

Towards functional selectivity for α6β3γ2 GABA$_A$ receptors: a series of novel pyrazoloquinolinones. Treven M, Siebert DCB, Holzinger R, Bampali K, Fabjan J, Varagic Z, Wimmer L, Steudle F, Scholze P, Schnürch M, Mihovilovic MD, Ernst M. *Br J Pharmacol.* 2018 Feb;175(3):419-428. doi: 10.1111/bph.14087

Molecular tools for GABA$_A$ receptors: High affinity ligands for β1-containing subtypes. Simeone X*, Siebert DCB*,Bampali K, Varagic Z, Treven M, Rehman S, Pyszkowski J,Holzinger R, Scholze P, Mihovilovic MD, Schnürch M, Ernst M. *Scientific Reports* 2017 Jul 18;7(1):5674. doi: 10.1038/s41598-017-05757-4.

Structural Studies of GABA$_A$ Receptor Binding Sites: Which Experimental Structure Tells us What? Puthenkalam R., Hieckel M., Simoene X., Suwattanasophon C., Feldbaur R.V., Ecker G.F., Ernst M. (2016) *Front. Mol Neurosci* 16;9:44 doi: 10.3389/fnmol.2016.00044

Identification of novel positive allosteric modulators and null modulators at the GABA$_A$ receptor $\alpha+/\beta-$ interface. Varagic Z, Wimmer L, Schnürch M, Mihovilovic MD, Huang S, Rallapalli S, Cook JM, Mirheydari P, Ecker GF, Sieghart W, Ernst M; *Br J Pharmacol 2013*, May;169(2):371-83.

Subtype selectivity of $\alpha+/\beta-$ site ligands of GABAA receptors – identification of the first highly specific positive modulators at $\alpha6\beta2/3\gamma2$ receptors. Varagic Z, Ramerstorfer J, Huang S, Rallapalli S, Sarto-Jackson I, Cook JM, Sieghart W, Ernst M; *Br J Pharmacol 2013*, May;169(2):384-99

A novel GABA-A receptor pharmacology: drugs interacting with the alpha+beta- interface. Sieghart W, Ramerstorfer J, Sarto-Jackson I, Varagic Z, Ernst M; Br J Pharmacol 2012, 166: 476-485

Diazepam-bound GABA-A receptor models identify new benzodiazepine binding site ligands. Richter L, de Graaf C, Sieghart W, Varagic Z, Mörzinger M, de Esch IJP, Ecker GF, Ernst M; Nature Chem Biol 2012, 8: 455-464

Comparative models of GABA$_A$ receptor extracellular and transmembrane domains: important insights in pharmacology and function. Ernst M, Bruckner S, Boresch S and Sieghart W; Mol Pharmacol 2005, 68(5): 1291-300

Heterogeneity of GABAA receptors: Revived Interest in the development of subtype-selective drugs. Sieghart, W and Ernst, M; Curr. Med. Chem. 2005, 5: 217- 242