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Main Research Area

Traumatic brain injury, neuronal development, neuronal degeneration, miRNAs, organotypic cultures of the central nervous system, Interneurons

Education

June 1991 General qualification for university entrance in Biology and Biotechnology from the Käthe-Kollwitz Gymnasium in Dortmund, Germany.

July 1999 Diploma of Ruhr-University Bochum, Germany in Biology.

June 2003 Dr. rer. nat., received from Ruhr-University Bochum, Germany in Biology.

Academic Milestones / Positions & Experience

August 1999-April 2000 Research assistant at the University Hospital Essen, Germany, Chair for Anatomy, RU Neuroanatomy.

May 2002 Research visit at CNR, Dept Neurophysiology, Prof. Dr. N. Berardi, Pisa, Italy.

June 2003- December 2008 PostDoc at the RU Developmental Neurobiology, Chair for Zoology and Neurobiology, Faculty for Biology and Biotechnology, Ruhr-University Bochum, Germany.

January 2009-November 2017 University assistant and Lab Leader Experimental Neurotraumatology, Medical University Graz, Austria.

November 2014 Habilitation – Venia docendi for “theoretical/experimental Neurosurgery” from Medical University Graz, Austria.

November 2017 Senior Scientist and Lab Leader Experimental Neurotraumatology, Medical University Graz, Austria.

Research Achievements**Selected Journal Papers Silke Patz**

1. Tractnig, C; Üçal, M; Tam-Amersdorfer, C; Bucko, A; Zefferer, U; Grünbacher, G; Absenger-Novak, M; Öhlinger, KA; Kraitsy, K; Hamberger, D; Schaefer, U; **Patz, S**. MicroRNA-451a overexpression induces accelerated neuronal differentiation of Ntera2/D1 cells and ablation affects neurogenesis in microRNA-451a^{-/-} mice. PLoS One. 2018; 13(11):e0207575-e0207575.
2. Engelhardt, M; Hamad, MIK; Jack, A; Ahmed, K; König, J; Rennau, LM; Jamann, N; Räk, A; Schönfelder, S; Riedel, C; Wirth, MJ; **Patz, S**; Wahle, P. Interneuron synaptopathy in developing rat cortex induced by the pro-inflammatory cytokine LIF. Exp Neurol. 2018; 302:169-180.
3. Engelhardt, M; di Cristo, G; Grabert, J; **Patz, S**; Maffei, L; Berardi, N; Wahle, P. Leukemia inhibitory factor impairs structural and neurochemical development of rat visual cortex in vivo. Mol Cell Neurosci. 2017; 79(3-4):81-92.
4. Üçal, M; Kraitsy, K; Weidinger, A; Paier-Pourani, J; **Patz, S**; Fink, B; Molcanyi, M; Schäfer, U

- Comprehensive Profiling of Modulation of Nitric Oxide Levels and Mitochondrial Activity in the Injured Brain: An Experimental Study Based on the Fluid Percussion Injury Model in Rats. *J Neurotrauma*. 2017; 34(2):475-486.
5. **Patz, S;** Trattinig, C; Grünbacher, G; Ebner, B; Güllý, C; Novak, A; Rinner, B; Leitinger, G; Absenger, M; Tomescu, OA; Thallinger, GG; Fasching, U; Wissa, S; Archelos-Garcia, J; Schäfer, U
More than cell dust: microparticles isolated from cerebrospinal fluid of brain injured patients are messengers carrying mRNAs, miRNAs, and proteins. *J Neurotrauma*. 2013; 30(14):1232-1242.
 6. **Patz, S;** Colovic, C; Wawro, S; Lafenetre, P; Leske, O; Heumann, R; Schönfelder, S; Tomaschewski, J; Räk, A; Wahle, P
Interneuronal growth and expression of interneuronal markers in visual cortex of mice with transgenic activation of Ras. *Exp Brain Res*. 2009; 199(3-4):265-278.
 7. **Patz, S;** Wahle, P
Developmental changes of neurotrophin mRNA expression in the layers of rat visual cortex. *Eur J Neurosci*. 2006; 24(9):2453-2460
 8. **Patz, S;** Grabert, J; Gorba, T; Wirth, MJ; Wahle, P
Parvalbumin expression in visual cortical interneurons depends on neuronal activity and TrkB ligands during an Early period of postnatal development. *Cereb Cortex*. 2004; 14(3):342-351.
 9. **Patz, S;** Wahle, P
Neurotrophins induce short-term and long-term changes of cortical neurotrophin expression. *Eur J Neurosci*. 2004; 20(3):701-708.
 10. **Patz, S;** Wirth, MJ; Gorba, T; Klostermann, O; Wahle, P
Neuronal activity and neurotrophic factors regulate GAD-65/67 mRNA and protein expression in organotypic cultures of rat visual cortex. *Eur J Neurosci*. 2003; 18(1):1-12.

Invited Talks and Keynotes:

Patz, S, 2016

Organotypic cultures: Methods and examples of applications.
Cell Culture Days; 2015+2016; Graz, Austria.

Schäfer, U; Habenwallner, S; Katschnig, M; Holzer, C; Laske, S; Balika, W; Wagner, M; Andraschek, N; Fasching, U; Absenger, M; Patz, S, 2012

The influence of nanostructures on neuronal stem cell characteristics.
Abstract. 2012; -CEITEC International Conference "Cell Interaction with Surfaces"; OCT 22-23, 2012; Brno, Czech Republic.

PhD/Master/Diploma supervision

PhD supervisor ongoing: Ongoing: Vanessa Mair, Katharina Rauch
Finalized: Christa Trattinig (2015), Daniel Hamberger (2016)

Membership in scientific societies:

Member of the German Society of Neuroscience

Reviewer:

Medical Gas Research, The International Journal of Neuroscience