

From the Department of Neurology

Director: Univ.-Prof. Dr. Hans-Peter Hartung

**The Role of the Extracellular Matrix in Axonal
Regeneration and its Treatment after Spinal Cord Injury**

Cumulative Habilitation Treatise

Receiving of the Venia Legendi

by the Medical Faculty

of the Heinrich Heine University Düsseldorf

submitted by

Dr. rer. nat. Barbara Grimpe

2013

Code of Conduct on Research Integrity

I, Dr. rer. nat. Barbara Grimpe, confirm that during my research activities at the various Universities, in which the different projects were conducted, I adhered myself to the Standards of Good Scientific Practice.

Düsseldorf, 8th of February, 2013

A handwritten signature in black ink that reads "Barbara Grimpe". The script is cursive and fluid, with the first name and last name clearly distinguishable.

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Dr. Barbara Grimpe

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- Publication 1: Oudega M, Chao OY, Avison DL, Bronson RT, Buchser WJ, Hurtado A, **Grimpe B** (2012) Systemic Administration of a Deoxyribozyme to Xylosyltransferase-1 mRNA Promotes Recovery after a Spinal Cord Contusion Injury, Experimental Neurology 237: 170-179
- Publication 2: Hurtado A, Podini H, Oudega M, **Grimpe B** (2008) Deoxyribozyme-mediated knock down of xylosyltransferase-1 mRNA promotes axon growth in the adult rat spinal cord, Brain 131: 2596-605
- Publication 3: Ries A, Goldberg JL, **Grimpe B** (2007) A novel biological function for CD44 in axon growth of retinal ganglion cells identified by a bioinformatics approach, Journal of Neurochemistry 103: 1491-1505
- Publication 4: **Grimpe B**, Pressman Y, Lupa MD, Horn KP, Bunge MB, Silver J (2005) The role of proteoglycans in Schwann cell/astrocyte interactions and in regeneration failure at PNS/CNS interfaces, Molecular and Cellular Neuroscience 28: 18-29
- Publication 5: **Grimpe B**, Silver J (2004) A novel DNA-enzyme reduces glycosaminoglycan chains in the glial scar and allows microtransplanted DRG axons to regenerate beyond lesions in the spinal cord, Journal of Neuroscience 24: 1393-1397
- Publication 6: **Grimpe B**, Dong S, Doller C, Temple K, Malouf AT, Silver J (2002) The critical role of basement membrane-independent laminin gamma 1 chain during axon regeneration in the CNS. Journal of Neuroscience 22: 3144-3160
- Publication 7: **Grimpe B**, Probst JC, Hager G (1999) Suppression of Nidogen-1 translation by antisense targeting affects the adhesive properties of cultured astrocytes, Glia, 28, 138-149

Additional Publication

Original Article: Rauch U, **Grimpe B**, Arnold-Ammer I, Kulbe G, Faessler R (1995) Structure and Chromosomal Localization of the Mouse Neurocan Gene, Genomics, 28, 405-410

Reviews: **Grimpe B** (2012) Deoxyribozymes and Bioinformatics: Complementary Tools to Investigate Axon Regeneration. Cell and Tissue Research, 349: 181-200

Grimpe B (2011) Deoxyribozymes: New therapeutics to treat central nervous system disorders. Frontiers in Molecular Neuroscience 25: 1-5

Grimpe B (2004) Aspects of antisense oligodeoxynucleotide, ribozyme, DNA enzyme and RNAi design, Current Medicinal Chemistry-Central Nervous System Agents 4: 1-15

Grimpe B, Silver J (2002) The extracellular matrix in axon regeneration. Progress in Brain Research 137: 333-349

Books: **Grimpe B** (1996) Isolierung und Charakterisierung des Neurocan-Promotors, Shaker Verlag, Aachen, ISBN 3-82651941-8

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