

Prof. Stefanie Kürten, MD

Department of Neuroanatomy



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Research Expertise

Multiple sclerosis (MS) is an autoimmune disorder of the central nervous system (CNS) and the most frequent neurological disease in young adults, leading to irreversible clinical deficits and premature retirement. On the one hand, my group focuses on the contribution of B cells and autoantibodies to the immunopathology of MS. Next to understanding the mechanisms of B cell-driven disease, we aim to develop novel therapeutic options and biomarkers for patients with MS. On the other hand, we are concerned with developing strategies to promote neuroregeneration and remyelination in the CNS. In addition, my group is concerned with studying the involvement of the enteric nervous system (ENS), dietary factors and food antigens in MS.

Education / Training

Habilitation for Anatomy and Cell Biology, University of Cologne, 2011

Dr. Med., University of Cologne, Germany, 2009

Medical License, University of Cologne, Germany, 2008

Appointments / Positions Held

since 2020

W3 Professor and Director, Department of Neuroanatomy at the Anatomical Institute, University of Bonn, Germany

2017 - 2020

W3 Professor and Director, Institute of Anatomy and Cell Biology, FAU Erlangen-Nürnberg, Germany

2013 - 2017

W2 Professor, Institute of Anatomy and Cell Biology, University of Würzburg, Germany

2015

Visiting Professor, Department of Neurology and Neurological Sciences, Stanford University, USA

2011

MSIF Du Prè Fellow, Department of Public Health, Epidemiology and Immunobiology, Yale University, USA

2008 - 2013

Postdoctoral Researcher, Institute of Anatomy I, University of Cologne, Germany

10 Most Relevant Publications for Prof. Stefanie Kürten

1. **Kürten S**, Schickel A, Kerkloh C, Recks MS, Addicks K, Ruddle NH, Lehmann PV (2012) Tertiary lymphoid organ development coincides with determinant spreading of the myelin-specific T cell response. *Acta Neuropathol*, 124(6):861-873. doi: 10.1007/s00401-012-1023-3.
2. Schampel A, Volovitch O, Koeniger T, Scholz CJ, Jörg S, Linker RA, Wischmeyer E, Wunsch M, Hell JW, Ergün S, **Kürten S** (2017) Nimodipine fosters remyelination in a mouse model of multiple sclerosis and induces microglia-specific apoptosis. *Proc Natl Acad Sci USA*, 114(16):E3295-E3304. doi: 10.1073/pnas.1620052114.
3. Wunsch M, Jabari S, Voussen B, Enders M, Srinivasan S, Cossais F, Wedel T, Boettner M, Schwarz A, Weyer L, Göcer O, Schroeter M, Maeurer M, Woenckhaus M, Pollok K, Radbruch H, Klotz L, Scholz C, Nickel J, Friebe A, Addicks K, Ergün S, Lehmann PV, **Kürten S** (2017) The enteric nervous system is a potential autoimmune target in multiple sclerosis. *Acta Neuropathol*, 134(2):281-29. doi: 10.1007/s00401-017-1742-6.
4. Mekala SR, Bauer J, Stoll O, Wagner N, Reeh L, Loew K, Eckner GL, Wischmeyer E, Dickinson M, Schulze H, Stegner D, Benndorf RA, Edenhofer F, **Kürten S**, Woersdoerfer P, Frantz S, Kwok CK, Ergün S (2018) Generation of cardiomyocytes from vascular adventitia-resident stem cells. *Circ Res*, 123(6):686-699. doi: 10.1161/CIRCRESAHA.117.312526.
5. **Kürten S**, Lanz TV, Lingampalli N, Lahey LJ, Kleinschnitz C, Mäurer M, Schroeter M, Braune S, Ziemssen T, Ho PP, Robinson WH, Steinman L (2020) Autoantibodies against central nervous system antigens in a subset of B cell-dominant multiple sclerosis patients. *Proc Natl Acad Sci USA*, 117(35):21512-21518. doi: 10.1073/pnas.2011249117.
6. Koeniger T, Bell L, Mifka A, Enders M, Hautmann V, Mekala SR, Kirchner P, Ekici AB, Schulz C, Wörsdörfer P, Mencil S, Kleinschnitz C, Ergün S, **Kürten S** (2021) Bone marrow-derived myeloid progenitors in the leptomeninges of adult mice. *Stem Cells*, 39(2):227-239. doi: 10.1002/stem.3311.
7. Tacke S, Braune S, Rovituso DM, Ziemssen T, Lehmann PV, Dikow H, Bergmann A, **Kürten S** (2021) B-cell activity predicts response to glatiramer acetate and interferon in relapsing-remitting multiple sclerosis. *Neurol Neuroimmunol Neuroinflamm*, 8(3):e980. doi: 10.1212/NXI.0000000000000980; open access
8. Chunder R, Weier A, Mäurer H, Lubert N, Enders M, Lubert G, Heider T, Spitzer A, Tacke S, Becker-Gotot J, Kurts C, Iyer R, Ho PP, Robinson WH, Lanz TV, **Kürten S** (2022) Antibody cross-reactivity between bovine casein and myelin results in demyelination in a mouse model of multiple sclerosis. *Proc Natl Acad Sci USA*, 119(10):e2117034119. doi: 10.1073/pnas.2117034119.
9. Chunder R, Schropp V, Jabari S, Marzin M, Amor S, **Kürten S** (2022) Identification of a novel role for matrix metalloproteinase-3 in the modulation of B cell responses in multiple sclerosis. *Front Immunol*, 13:1025377. doi: 10.3389/fimmu.2022.1025377
10. Schropp V, Chunder R, Dietel B, Tacke S, **Kürten S** (2023) The presence of cerebellar B cell aggregates is associated with a specific chemokine profile in the cerebrospinal fluid in a mouse model of multiple sclerosis. *J Neuroinflammation* 20(1):18. doi: 10.1186/s12974-023-02695-z.