

# Dr. med. Sabine Liebscher, PhD

## Contact address

Current organization name: Klinikum der Universität München, Ludwig-Maximilians University Munich & University of Cologne, Dept. of Neurology

Current department: Institute of Clinical Neuroimmunology/Emmy Noether group

Street: Grosshaderner Strasse 9

Postcode: 82152

Town: Planegg/Martinsried

Country: Germany

Phone: 089 2180 71659

E-mail: sabine.liebscher@med.uni-muenchen.de, sabine.liebscher@uk-koeln.de

## Education

2008 - 2014 PhD "Structural and functional alterations of cortical neurons in Alzheimer's disease transgenic mice assessed by two-photon in vivo imaging" (summa cum laude), MPI of Neurobiology & LMU / Faculty of Biochemistry, Germany

2008 Dr. med., Dept. of Psychiatry / Medical Faculty / TU-Dresden / Germany

2007 – 2008 Research Associate, Paul Greengard-Lab / Rockefeller University, USA

2000 – 2007 Medical studies, Medical Faculty / TU-Dresden, Germany

## Current position(s)

As of 05/2023 W2 Prof. for Cellular Neurophysiology, Dept. of Neurology, University hospital Cologne, Cologne, Germany

Since 11/2017 Research Group leader (Emmy Noether Group)  
Institute of Clinical Neuroimmunology, Klinikum der Universität München, Ludwig-Maximilians University Munich, Germany

Since 06/2014 Head of Clinician Scientist Group & Resident in Neurology  
Institute of Clinical Neuroimmunology, University hospital Munich, LMU Munich, Germany

## Selected fellowships and awards

Since 2019 PI in Excellence Cluster SyNergy

Since 2019 PI in European-wide Innovative Training Network (SAND)

2017 Emmy Noether Award, German Research Association (DFG) / Germany

2014 Clinical Scientist Group Leader Award, SyNergy / Germany

2008 Lohrmann Medal, Medical Faculty / TU Dresden / Germany

2001 – 2008 Scholarship from German National Academic Foundation

## Selected teaching activities

- Since 2018 Lecturer “Neuroimmunology”, lab course “Optophysiology” and “Cloning in a nutshell” (Graduate School of Systemic Neurosciences / LMU /Germany)
- Since 2014 Tutor for bedside teaching, anamnesis, and neurological examination / Medical Faculty / LMU / Germany

## Membership of scientific societies

- Since 2018 Member Editorial Board, Frontiers in Neurodegeneration
- Since 2018 Member of AcademiaNet, Robert Bosch Stiftung
- Since 2017 Member of Young Center of the Center for Advanced Studies / LMU Munich
- 2008 – 2014 Member of the International Max Planck Research School for Molecular and Cellular Life Sciences (IMPRS) / Munich / Germany
- 2008 – 2014 Member of the Graduate School of Systemic Neurosciences (GSN) / Munich / Germany

## Publications

- Scekic-Zahirovic, J., Benetton C., Brunet, A., Ye, X., Logunov, E., Douchamps, V., Megat, S., Andry, V., Kan, W.Y.V., Stuart-Lopez, G., Gilet, J., Trombini, M., Dieterle S., Sinninger, J., Fischer, M., Rene, F., Gunes, Z., Kessler, P., Dupuis, L., Pradat, P.F., Goumon, Y., Goutagny, R., Marchand-Pauvert, V. #, **Liebscher S.** # and Rouaux, C. #. (2023). Noradrenaline deficiency as a driver of cortical hyperexcitability in Amyotrophic lateral sclerosis. *Science Translational Medicine – in revision*
- Kolabas Z.I., Kuemmerle L.B., Pernecky R., Förstera B., Ulukaya S., Ali M., ..., **Liebscher S.**, Hauser A.E., Gokce O., Lickert, H., Steinke H., Benakis C., Braun C., Martinez-Jimenez C.P., Buerger K., Albert N.L., Höglinger G., Levin J., Haass C., Kopczak, A., Dichgans M., Havla J., Kümpfel T., Kerschensteiner M., Schifferer M., Simons M., Liesz A., Kraemer N., Bayraktar O.A., Franzmeier N., Plesnila N., Erener S., Puelles V.G., Delbridge C., Bhatia H.S., Hellal F., Elsner M., Bechmann I., Ondruschka B., Brendel M., Theis F.J., Erturk A. (2023). Distinct molecular profiles of skull bone marrow in health and neurological disorders. *Cell* 186(17)
- Pilotto, F., Douthwaite, C., Diab, R., Ye, X., Qassab, Z., Tietje, C., Mounassir, M., Odriozola, A., Thapa, A., Buijsen, R., Lagache, S., Uldry, A.-C., Heller, M., Müller, S., van Roon-Mom, W.M.C., Zuber, B., **Liebscher, S.** #, and Saxena, S. # (2023). Early molecular layer interneuron hyperactivity triggers Purkinje neuron degeneration in SCA1. *Neuron*. doi: 10.1016/j.neuron.2023.05.016  
# equal contribution
- Zambusi, A., Novoselc, K.T., Hutten, S., Kalpazidou, C.K., Schieweck, R., Aschenbroich, S., Silva, L., ..., **Liebscher, S.**, Schlegel, S., Aliee, H., Theis, F., Meiners, S., Kiebler, M., Dormann, D., Ninkovic, J., (2022). TDP-43 condensates and lipid droplets regulate the reactivity of microglia and regeneration after traumatic brain injury. *Nature Neuroscience*
- Schneider, J., Weigel, J., Wittmann, M.T., Svehla, P., Eht, S., Zheng, F., Elmazahi, T., Karpf, J., Basak, O., Ekici A., Reis, A., Knobloch, M., Alzheimer, C., Ortego de la O, F., **Liebscher S.** and Beckervordersandforth, R. (2022). Astrogenesis in the murine dentate gyrus is a life-long and plastic process mediated by proliferation of neural stem cells and local astrocytes. *EMBO*
- Empl L., Chovsepian A., Chahin M., Kan V., Salaam S.A., Marcantoni M., Ghanem A., Conzelmann K.K., Cai R., Ertürk A., Kreutzfeld M., Merkler D., **Liebscher S.** and Bareyre F. (2022). Adaptive plasticity of callosal neurons in the adult contralesional cortex following traumatic brain injury. *Nature Communications*
- Korzhova V., Marinković P., Njavro, J.R., Goltstein P.M., Sun F., Tahirovic S., Herms J., **Liebscher S.** (2021). Long-term dynamics of aberrant neuronal activity in Alzheimer’s disease transgenic mice. *Communications Biology*

- Blumenstock S., Sun F., Klaus C., Marinković P., Sgobio C., Päger L., **Liabscher S.#** and Herms J.# (2021). Cortical circuit dysfunction in a mouse model of alpha-synucleinopathy *in vivo*. *Brain Communications* # equal contribution
- D'Errico P., Ziegler-Waldkrich S., Aires-Mofreita V., Hoffmann P., Mezö C., Erny D., **Liabscher S.**, Kierdorf K., Straszewski O., Prinz M. and Meyer-Luehmann M. (2021). Microglia contribute to the propagation of A $\beta$  pathology into unaffected brain tissue. *Nature Neuroscience*
- Steffens H., Mott A. C., Li S., Wegner W., Svehla P., Kan W.Y.V., Wolf F., **Liabscher S.#** and Willig K.# (2021). Stable but not rigid: Chronic *in vivo* STED nanoscopy reveals extensive remodeling of spines, indicating multiple drivers of plasticity. *Science Advances* # equal contribution
- Scekic-Zahirovic J., Sanjuan-Ruiz I., Kan V., Megat S., De Rossi P., Dieterlé S., Cassel R., Kessler P., Wiesner D., Tzeplaeff L., Demais V., Muller H.P., Picchiarelli G., Mishra N., Grosch S., Kassubek J., Rasche V., Ludolph A., Boutillier A.-L., Roselli F., Polymenidou M., Lagier-Tourenne C., **Liabscher S.#** and Dupuis L.# (2021). Cytoplasmic accumulation of FUS triggers early behavioral alterations linked to cortical neuronal hyperactivity and inhibitory synaptic defects. *Nature communications* # equal contribution
- Saxena, S. and **Liabscher S.** (2020). "Editorial: Circuit Mechanisms of Neurodegenerative Diseases." *Front Neurosci* **14**: 593329.
- Gunes ZI., Kan V., Ye X. and **Liabscher S.** (2020). Exciting complexity: the role of motor circuit elements in ALS pathophysiology. *Frontiers in Neuroscience*.
- Cai R., Pan C., Ghasemigharagoz A., Todorov M.I., Förstera B.,..., **Liabscher S.**, Bechmann I., Liesz A., Menze B., Kerschensteiner M., Nedergaard M., Ertürk A. (2019). Panoptic imaging of transparent mice reveals whole-body neuronal projections and skull-meninges connections. *Nature Neuroscience* 22(2).
- Burgold J., Schulz-Trieglaff E.K., Voelkl K., Gutiérrez-Ángel S., Bader J.M., Hosp F., Mann M., Arzberger T., Klein R.#, **Liabscher S.#** & Dudanova I.# (2019). Cortical circuit alterations precede motor impairments in Huntington's disease mice. *Scientific Reports* # equal contribution
- Llovera G., Benakis C., Enzmann G., Cai R., Arzberger T., Ghasemigharagoz A., Mao X., Malik R., Lazarevic I., **Liabscher S.**, Ertürk A., Meissner L., Vivien D., Haffner C., Plesnila N., Montaner J., Engelhardt B., Liesz A. (2017). The choroid plexus is a key cerebral invasion route for T cells after stroke. *Acta Neuropathologica* 134(6)
- Liabscher, S.#**, Keller, G.B., Goltstein, P.M., Bonhoeffer, T., and Hübener, M.# (2016). Selective Persistence of Sensorimotor Mismatch Signals in Visual Cortex of Behaving Alzheimer's Disease Mice. *Current Biology* 26 # corresp.author
- Liabscher, S.**, Page, R.M., Kafer, K., Winkler, E., Quinn, K., Goldbach, E., Brigham, E.F., Quincy, D., Basi, G.S., Schenk, D.B., H. Steiner, T. Bonhoeffer, C. Haass, M. Meyer-Luehmann and M. Hübener. (2014). Chronic gamma-secretase inhibition reduces amyloid plaque-associated instability of pre- and postsynaptic structures. *Molecular Psychiatry* 19
- McCarter, J.F., **Liabscher, S.**, Bachhuber, T., Abou-Ajram, C., Hübener, M., Hyman, B.T., Haass, C., and Meyer-Luehmann, M. (2013). Clustering of plaques contributes to plaque growth in a mouse model of Alzheimer's disease. *Acta Neuropathologica* 126, 179-188.
- Liabscher, S.**, Meyer-Luehmann, M. (2012). A Peephole into the Brain: Neuropathological Features of Alzheimer's Disease Revealed by *in vivo* Two-Photon Imaging. *Frontiers in Psychiatry*
- Capell, A., **Liabscher S.**, Fellerer K., Brouwers N., Willem M., Lammich S., Gijssels I., Bittner T., M. Carlson A., Sasse F., Kunze B., Steinmetz H., Jansen R., Dormann D., Sleegers K., Cruts M., Herms J., Van Broeckhoven C. and Haass C. (2011). Rescue of progranulin deficiency associated with frontotemporal lobar degeneration by alkalizing reagents and inhibition of vacuolar ATPase. *J Neurosci* **31**(5): 1885-1894.
- Rebholz, H., Nishi, A., **Liabscher, S.**, Nairn, A.C., Flajolet, M., Greengard, P. (2009). CK2 negatively regulates Galphas signaling. *PNAS* 106:14096-14101
- Günther, L., **Liabscher, S.**, Jähkel, M. & Oehler, J. (2008). Effects of chronic citalopram treatment on 5-HT<sub>1A</sub> and 5-HT<sub>2A</sub> receptors in group- and isolation-housed mice. *European Journal of Pharmacology* **593**, 49-61