

Dr. Thomas Mager

GENERAL INFORMATION

Date of birth: 01.10.1981
Gender: male
Nationality: German
Current position: Group Leader in the Institute for Auditory Neurosciences and Optogenetics Application Specialist, Cluster of Excellence (Multiscale Bioimaging: From Molecular Machines to Networks of Excitable Cells)
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ACADEMIC EDUCATION

2009 – 2012 Postgraduate studies in Biophysics/Biochemistry (Prof. Dr. Klaus Fendler), Max-Planck-Institute of Biophysics and Goethe University, Frankfurt am Main
2003 – 2008 Diploma studies in Biochemistry, Goethe University, Frankfurt am Main

SCIENTIFIC DEGREES

2012 Dr. phil. nat. in Biochemistry, Goethe University, Frankfurt am Main
2008 Diploma degree in Biochemistry, Faculty of Biochemistry, Chemistry, Pharmacy, Goethe University, Frankfurt am Main

PROFESSIONAL CAREER AFTER COMPLETING DEGREE

Since 06/2021 Group Leader, Institute for Auditory Neuroscience, University Medical Center Göttingen
Since 05/2019 Optogenetics Application Specialist, Cluster of Excellence (Multiscale Bioimaging: From Molecular Machines to Networks of Excitable Cells)
05/2019-05/2021 Senior Scientist, Institute for Auditory Neuroscience, University Medical Center Göttingen
02/2019-04/2019 Postdoctoral Fellow, Institute for Auditory Neuroscience, University Medical Center Göttingen (Prof. Dr. Tobias Moser)
10/2012-01/2019 Postdoctoral Fellow, Department of Biophysical Chemistry, Max-Planck-Institute of Biophysics, Frankfurt am Main (Prof. Dr. Ernst Bamberg)

MISCELLANEOUS

Patent Applications

E. Bamberg, P. Wood, T. Mager, T. Moser, D. Lopez de la Morena; Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V., Universitätsmedizin Göttingen; Mutant light-inducible ion channel of Chrimson (World patent application no. PCT/EP2017/063458; priority date: June 3th 2016; publication date: December 7th 2017).

E. Bamberg, P. Wood, T. Mager; Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.; Mutant light-inducible ion channel of Channelrhodopsin (World patent application no. PCT/EP2017/063425; priority date: June 3th 2016; publication date: December 7th 2017).

E. Bamberg, T. Mager, V. Shevchenko, V. Gordeliy; Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V.; New optogenetic tool (World patent application no. PCT/EP2018/059297; priority date: April 12 th 2017; publication date: October 18th, 2018)

SELECTED PUBLICATIONS (with scientific assurance)

Mager, T.*, Lopez de la Morena, D.*, Senn, V., Schlotte, J., D'Errico, A., Feldbauer, K., Wrobel, C., Jung, S., Bodensiek, K., Rankovic, V., Browne, L., Huet, A., Jüttner, J., Wood, P.G., Letzkus, J.J., Moser, T., Bamberg, E. (2018) High frequency neural spiking and auditory signaling by ultrafast red-shifted optogenetics, *Nat Commun* 9, 1750. *equal contribution

Shevchenko, V.*, **Mager, T.***, Kovalev, K.*, Polovinkin, V.*, Alekseev, A., Juettner, J., Chizhov, I., Bamann, C., Vavourakis, C., Ghai, R., Gushchin, I., Borshchevskiy, V., Rogachev, A., Melnikov, I., Popov, A., Balandin, T., Rodriguez-Valera, F., Manstein, D. J., Bueldt, G., Bamberg, E., and Gordeliy, V. (2017) Inward H(+) pump xenorhodopsin: Mechanism and alternative optogenetic approach, *Sci Adv* 3, e1603187. *equal contribution

Zabelskii, D., Alekseev, A., Kovalev, K., Rankovic, V., Balandin, T., Soloviov, D., Bratanov, D., Savelyeva, E., Podolyak, E., Volkov, D., Vaganova, S., Astashkin, R., Chizhov, I., Yutin, N., Rulev, M., Popov, A., Eria-Oliveira, A. S., Rokitskaya, T., **Mager, T.**, Antonenko, Y., Rosselli, R., Armeev, G., Shaitan, K., Vivaudou, M., Buldt, G., Rogachev, A., Rodriguez-Valera, F., Kirpichnikov, M., Moser, T., Offenhausser, A., Willbold, D., Koonin, E., Bamberg, E., and Gordeliy, V. (2020) Viral rhodopsins 1 are an unique family of light-gated cation channels, *Nat Commun* 11, 5707.

Bali, B., Lopez de la Morena, D., Mittring, A., **Mager, T.**, Rankovic, V., Huet, A. T., and Moser, T. (2021) Utility of red-light ultrafast optogenetic stimulation of the auditory pathway, *EMBO Mol Med* 13, e13391.

Bratanov, D., Kovalev, K., Machtens, J. P., Astashkin, R., Chizhov, I., Soloviov, D., Volkov, D., Polovinkin, V., Zabelskii, D., **Mager, T.**, Gushchin, I., Rokitskaya, T., Antonenko, Y., Alekseev, A., Shevchenko, V., Yutin, N., Rosselli, R., Baeken, C., Borshchevskiy, V., Bourenkov, G., Popov, A., Balandin, T., Buldt, G., Manstein, D. J., Rodriguez-Valera, F., Fahlke, C., Bamberg, E., Koonin, E., and Gordeliy, V. (2019) Unique structure and function of viral rhodopsins, *Nat Commun* 10, 4939.

Vinayagam, D., **Mager, T.**, Apelbaum, A., Bothe, A., Merino, F., Hofnagel, O., Gatsogiannis, C., and Raunser, S. (2018) Electron cryo-microscopy structure of the canonical TRPC4 ion channel, *Elife* 7.

Mager, T., Wood, P. G., and Bamberg, E. (2017) Optogenetic Control of Ca(2+) and Voltage dependent Large Conductance (BK) Potassium Channels, *J Mol Biol* 429, 911-921.

Mager, T., Braner, M., Kubsch, B., Hatahet, L., Alkoby, D., Rimon, A., Padan, E., and Fendler, K. (2013) Differential effects of mutations on the transport properties of the Na⁺/H⁺ antiporter NhaA from Escherichia coli, *J Biol Chem* 288, 24666-24675.

Greuer, C., Gameiro, A., **Mager, T.**, and Fendler, K. (2013) Electrophysiological characterization of membrane transport proteins, *Annu Rev Biophys* 42, 95-120.

Mager, T., Rimon, A., Padan, E., and Fendler, K. (2011) Transport mechanism and pH regulation of the Na⁺/H⁺ antiporter NhaA from Escherichia coli: an electrophysiological study, *J Biol Chem* 286, 23570-2358