BRECKWOLDT, MICHAEL, PD DR. MED., PH.D

GENERAL INFORMATION

Emmy Noether group leader, Consultant
Head: Section Immuno-Imaging
University Hospital Heidelberg, Department of Neuroradiology
Im Neuenheimer Feld 400
69120 Heidelberg, Germany

B06N

ACADEMIC EDUCATION & QUALIFICATION

Year(s)	Education
2003 – 2010	Medical Doctor, Medical School, Technical University Munich New York University, Oxford University and University of Sydney

SCIENTIFIC EDUCATION & QUALIFICATION

Year(s)	Education
2021	Habilitation in Neuroradiology, University of Heidelberg
2021	Emmy Noether Group leader
2014	PhD (Summa cum laude), "Imaging of mitochondrial redox signals in neuronal physiology and pathology" Institute for Neuroscience, TU Munich, Clinical Neuroimmunology, LMU Advisors: M. Kerschensteiner, T. Misgeld
2012	MD thesis (Summa cum laude), "Molecular imaging of inflammation using magnetic resonance imaging in mouse models of stroke and multiple sclerosis." Neuroradiology Department, TU Munich, Advisor: C. Zimmer
2010-2013	PhD Student Institute for Neuroscience, TU Munich, Institute for Clinical Neuroimmunology, LMU, Advisors: M. Kerschensteiner, T. Misgeld
2006-2007	Research Fellow, "Molecular Imaging of Inflammation using MRI." Center for Molecular Imaging Research, Center for Systems Biology, Massachusetts General Hospital, Harvard Medical School, Advisors: R. Weissleder, J. Chen

PROFESSIONAL EXPERIENCE

Year(s)	Experience
Since 2022	Head of Section: Immuno-Imaging
Since 2019	Clinical attending in neuroradiology, Department of Neuroradiology, University Hospital Heidelberg
2013 –2019	Residency in Radiology, Department of Neuroradiology, University Hospital Heidelberg Rotations: Radiology Department (DKFZ); Neurology Department; Stroke Unit; Pediatric Radiology
2015 – 2016	Post-doc Clinical Cooperation Unit Neuroimmunology & Brain Tumor Immunology Unit, German Cancer Research Center (DKFZ), Heidelberg, Advisor: M. Platten Physician-Scientist Fellow, University of Heidelberg

SELECTED PUBLICATIONS

1. V Turco, K Pfleiderer, J Hunger, NK Horvat, K Karimian-Jazi, K Schregel, M Fischer, G Brugnara, K Jaehne, V Sturm, Y Streibel, D Nguyen, S Altamura, DA Agardy, Shreya S. Soni, A Alsasa, T Bunse, M Schlesner, MU Muckenthaler, R Weissleder, W Wick, S Heiland, P Vollmuth, M Bendszus, CB Rodell, MO Breckwoldt# and M Platten#, T cell-

independent eradication of experimental glioma by intravenous TLR7/8-agonist-loaded nanoparticles, **Nature Commun**, 2023, 14:771

2. K Schregel#, L Heinz, J Hunger, C Pan, J Bode, M Fischer, V Sturm, V Venkataramani, K Karimian-Jazi, D Agardy, Y Streibel, R Zerelles, W Wick, S Heiland, T Bunse, B Tews, M Platten, F Winkler, M Bendszus, and MO Breckwoldt, A cellular ground truth to develop MRI signatures in glioma models by correlative light sheet microscopy and atlas-based co-registration, **J Neurosci**, 2023 7:JN-RM-1470-22
3. J Hunger, K Schregel, B Boztepe, DA Agardy, V Turco, K Karimian-Jazi, I Weidenfeld, Y Streibel, M Fischer, V Sturm, R Santarella-Mellwig, M Kilian, K Jähne, K Sahm, W Wick, L Bunse, S Heiland, T Bunse, M Bendszus, M Platten and MO Breckwoldt, In vivo nanoparticle-based T cell imaging can predict therapy 1 response towards adoptive T cell therapy in experimental glioma, **Theranostics** 2023, accepted, epub
4. D Hausmann, DC Hoffmann, V Venkataramani, E Jung, S Horschitz, SK Tetzlaff, A Jabali, L Hai, T Kessler, DD Azorín, S Weil, A Kourtesakis, P Sievers, A Habel, MO Breckwoldt, MA Karreman, M Ratliff, JM Messmer, Y Yang, E Reyhan, S Wendler, C Löb, C Mayer, K Figarella, M Osswald, G Solecki, F Sahm, O Garaschuk, T Kuner, P Koch, M Schlesner, W Wick, F Winkler, Autonomous rhythmic activity in glioma networks drives brain tumor growth, **Nature**, 2023 Jan;613(7942):179-186
5. M Platten, L Bunse, A Wick, T Bunse, L Le Cornet, I Harting, F Sahm, K Sanghvi, C Leng Tan, I Poschke, E Green, S Justesen, G Behrens, MO Breckwoldt, A Freitag, LM Rother, A Schmitt, O Schnell, J Hense, M Misch, D Krex, D Stevanovic, G Tabatabai, JP Steinbach, M Bendszus, A von Deimling, M Schmitt, W Wick, Phase 1 trial of IDH1-vac, a peptide vaccine for IDH1R132H glioma, **Nature**, 2021, 592, 463–468
6. K Karimian-Jazi*, P Münch*, A Alexander, M Fischer, K Pfleiderer, M Piechutta, MA Karreman, GM Solecki, AS Berghoff, M Friedrich, K Deumelandt, FT Kurz, W Wick, S Heiland, M Bendszus, F Winkler, M Platten and MO Breckwoldt, Monitoring innate immune cell dynamics in the glioma microenvironment by correlated magnetic resonance imaging and multiphoton microscopy (MR-MPM), **Theranostics** 2020, 10, 4
7. K Aslan, V Turco, J Blobner, JK Sonner, AR Liuzzi, N Gonzalo Núñez, D de Feo, P Kickingereder, M Fischer, E Green, A Sadik, M Friedrich, K Sanghvi, M Kilian, F Cichon, L Wolf, K Jähne, A von Landenberg, L Bunse, F Sahm, D Schrimpf, J Meyer, A Alexander, G Brugnara, R Röth, K Pfleiderer, B Niesler, A von Deimling, C Opitz, MO Breckwoldt, S Heiland, M Bendszus, W Wick, B Becher and M Platten, Heterogeneity of response to immune checkpoint blockade in hypermutated experimental gliomas, **Nature Commun**, 2020 Feb 18;11(1):931
8. K Kirschbaum*, JK Sonner*, MW Zeller, K Deumelandt, J Bode, R Sharma, T Krüwel, M Fischer, A Hoffmann, M Costa da Silva, MU Muckenthaler, W Wick, B Tews, JW Chen, S Heiland, M Bendszus, M Platten and MO Breckwoldt, In vivo nanoparticle imaging of infiltrating macrophages and activated microglia can serve as a marker of disease severity in a mouse model of multiple sclerosis, **PNAS**. 2016; 113(46), 13227–13232.
9. MO Breckwoldt*, J Bode*, FT Kurz, A Hoffmann, K Ochs, M Ott, K Deumelandt, T Krüwel, D Schwarz, M Fischer, X Helluy, D Milford, K Kirschbaum, G Solecki, S Chiblak, A Abdollahi, F Winkler, W Wick, M Platten, S Heiland, M Bendszus and B Tews, Correlated MR imaging and ultramicroscopy (MR-UM) is a tool kit to assess the dynamics of glioma angiogenesis, **eLIFE**, 2015; 5:e11712, *equal contribution
10. Breckwoldt MO, Pfister F, Bradley,PM, Marinković P, Williams PR, Brill MS, Plomer B, Schmalz, A, St. Clair DK, Naumann R, Griesbeck O, Schwarzländer M, Godinho L, Bareyre FM, Dick TP, Kerschensteiner M# and Misgeld T#, Multi-parametric optical analysis of redox signals during neuronal physiology and pathology in vivo. **Nat Med**. 2014 May;20(5):555-60

*equal contributation
shared senior authorship