

BUNSE, LUKAS DR. MED. DR. RER. NAT.

GENERAL INFORMATION



Team Leader

University Hospital Mannheim, Department of Neurology
Theodor-Kutzer-Ufer 1-3
68167 Mannheim, Germany

B03

ACADEMIC EDUCATION & QUALIFICATION

| Year(s) | Education |
|-----------|--|
| 2009-2016 | Medical School Medical School, University Heidelberg, Germany Institute of Neurology, University College London (UCL), England |

SCIENTIFIC EDUCATION & QUALIFICATION

| Year(s) | Education |
|---------|---|
| 2016 | MD doctoral thesis; supervisor: Prof. Dr. Michael Platten, MD; German Cancer Research Center Heidelberg and Neurology Clinic, University Hospital Heidelberg, University Heidelberg; summa cum laude |
| 2020 | PhD doctoral thesis; supervisor: Prof. Dr. Michael Platten, MD; German Cancer Research Center Heidelberg; Neurology Clinic, University Hospital Heidelberg, University Heidelberg; Faculty of Biosciences, University Heidelberg summa cum laude |

PROFESSIONAL EXPERIENCE

| Year(s) | Education |
|------------|---|
| Since 2019 | Resident in Neurology, Neurology Clinic, Medical Faculty Mannheim |
| 2016-2018 | Postdoc at German Cancer Research Center, Clinical Cooperation Unit Neuroimmunology and Brain Tumor Immunology (Prof. Dr. Michael Platten, MD) and Neurology Clinic, University Hospital Heidelberg (Prof. Dr. Wolfgang Wick, MD) |
| 2013-2014 | Research fellow at Ann Romney Center of Neurologic Diseases, Brigham and Women's Hospital, Harvard Medical School, Boston, USA (Prof. Francisco Quintana, PhD) |

OTHER QUALIFICATIONS/ROLES/RESPONSIBILITIES

| Year(s) | Qualifications/Roles/Responsibilities |
|-----------|--|
| 2023 | Novartis Award, German Society for Immunology |
| 2021 | Cancers Young Investigator Award |
| 2019 | Hella Bühler Award, University Heidelberg Foundation |
| 2019 | Swiss Bridge Award, Swiss Bridge Foundation |
| 2019-2022 | Memorial Fellow, Else Kröner Fresenius Foundation (EKFS) |
| 2019 | Sybille Assmus Research Award, Sybille Assmus Foundation |
| 2018 | Ruprecht-Karls-Award, University Heidelberg Foundation |
| 2017 | Württemberg Cancer Award, Young Investigator, Dres. Bayer-Foundation |
| 2017 | Dr.-Feldbausch-Foundation Award, Medical School, University Heidelberg |
| 2015 | Andreas-Zimprich Award in Neuro-Oncology, Andreas-Zimprich-Foundation |
| 2015 | Carl Duisberg-Fellow, Bayer Science & Education Foundation |
| 2014 | Dr. Holger Müller Award, Care-for-Rare Foundation |
| 2013-2014 | Research Fellow, International Academy of Life Sciences |
| 2012-2013 | Research Fellow, Heinrich F. C. Behr-Foundation |

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|-----------|---|
| 2011-2020 | Fellow, MD/PhD program, University Heidelberg |
| 2011-2016 | Fellow, Cusanuswerk e.V. |

SELECTED PUBLICATIONS

1. Kilian M*, Sheinin R*, Tan CL, Friedrich M, Krämer C, Kaminitz A, Sanghvi K, Lindner K, Chih YC, Cichon F, Richter B, Jung S, Jähne K, Ratliff M, Prins RM, Etminan N, von Deimling A, Wick W, Madi A*, Bunse L*, Platten M* MHC class II-restricted antigen presentation is required to prevent dysfunction of cytotoxic T cells by blood-borne myeloids in brain tumors. **Cancer Cell.** 41, 1–17 (2023)
2. Friedrich M, Hahn M, Michel J, Sankowski R, Kilian M, Kehl N, Günter M, Bunse T, Pusch S, von Deimling A, Wick W, Autenrieth SE, Prinz M, Platten M, Bunse L. Dysfunctional dendritic cells limit antigen-specific T cell response in glioma. **Neuro-Oncology**, 25(2):263-276 (2023)
3. Kilian M, Friedrich M, Sanghvi K, Green E, Pusch S, Kawachi D, Löwer M, Sonner JK, Krämer C, Zaman J, Jung S, Breckwoldt MO, Willimsky G, Eichmüller SB, von Deimling A, Wick W, Sahm F, Platten M, Bunse L. T cell receptor therapy targeting mutant capicua transcriptional repressor in experimental gliomas. **Clin Cancer Res.** 28:378–89. (2022)
4. Platten M, Bunse L, Wick A, Bunse T, Le Cornet L, Harting I, Sahm F, Sanghvi K, Tan CL, Poschke I, Green E, Justesen S, Behrens GA, Breckwoldt M, ..., Bendzus M, von Deimling A, Schmitt M, Wick W. A vaccine targeting mutant IDH1 in newly diagnosed glioma. **Nature.** 592(7854):463-468. (2021)
5. Friedrich M*, Sankowski R*, Bunse L*, Kilian M, Green E, Ramallo-Guevara C, Pusch S, Poschet G, Sanghvi K, Hahn M, Bunse T, Münch P, Sonner JK, von Landenberg A, Cichon F, Aslan K, Trobisch T, Schirmer L, Abu-Sammour D, Kessler T, Ratliff M, Schimpf D, Sahm F, Hopf C, Heiland DH, Schnell O, Beck J, Böttcher C, Fernandez-Zapata C, Priller J, Heiland S, Gutcher I, Quintana FJ, von Deimling A, Wick W, Prinz M*, Platten M*. Tryptophan metabolism drives dynamic immunosuppressive myeloid states in IDH-mutant gliomas. **Nature Cancer.** 2, 723–740. (2021)
6. Hilf N*, Kuttruff-Coqui S*, Frenzel K, ..., Bunse L, Song C, Heesch S, Wagner C, Kemmer-Brueck A, Ludwig J, Castle JC, Schoor O, Tadmor A, Green E, Fritsche J, Meyer M, Pawlowski N, Dorner S, Hoffgaard F, Rössler B, Maurer D, Weinschenk T, Reinhardt S, Huber C, Rammensee HG, Singh H, Sahin U, Dietrich PY, Wick W. Actively personalized vaccination in newly diagnosed glioblastoma. **Nature.** 565(7738):240-245. (2019).
7. Bunse L*, Pusch S*, Bunse T*, Sahm F, Sanghvi K, Friedrich M, Alansary D, Sonner JK, Green E, Deumelandt K, Kilian M, Neftel C, Uhlig S, Kessler T, von Landenberg A, Berghoff AS, Marsh K, Steadman M, Zhu D, Nicolay B, Wiestler B, Breckwoldt MO, Al-Ali R, Karcher-Bausch S, Bozza M, Oezen I, Kramer M, Meyer J, Habel A, Poschet G, Weller M, Preusser M, Nadji-Ohl M, Thon N, Burger M, Harter P, Ratliff M, Harbottle R, Benner A, Schimpf D, Okun J, Herold-Mende CM, Turcan S, Kaulfuss S, Hess-Stumpff H, Bieback K, Cahill DP, Plate KH, Hänggi D, Dorsch M, Suva M, Niemeyer BA, von Deimling A, Wick W, Platten M. Suppression of antitumor T cell immunity by the oncometabolite R-2-hydroxyglutarate. **Nat Med.** doi: 10.1038/s41591-018-0095-6. (2018).
8. Rothhammer V, Mascanfroni ID, Bunse L, ..., Pochet N, Clish CB, Prinz M, Prat A, Antel J, Quintana FQ. Type I interferons and microbial metabolites of tryptophan modulate astrocyte activity and central nervous system inflammation via the aryl hydrocarbon receptor. **Nat Med** 2016; 22(6):586-97
9. Bunse L*, Schumacher T*, Sahm F*, Pusch S, Oezen I, Rauschenbach K, Gonzalez M, Solecki G, Osswald M, Capper D, Wiestler B, Winkler F, Herold-Mende C, von Deimling A, Wick W, Platten M. Proximity ligation assay evaluates IDH1R132H presentation in gliomas. **J Clin Invest** 2015; 125, 593-606
10. Schumacher T*, Bunse L*, Pusch S, Sahm F, Wiestler B, ..., Sahin U, Friese MA, Beckhove P, von Deimling A, Wick W, Platten M. A vaccine targeting mutant IDH1 induces antitumor immunity. **Nature** 2014; 512(7514):324-7

*Co-first authors

PATENTS

- Method for the Detection of Antigen Presentation (DKFZ, P1203, EPA 14190538.0)
 - Histone Anti-Cancer Vaccines (WO/2017/009349)
 - Gene Signatures for the selection of tumor-reactive T cell receptor (PCT/EP2022/057672)
 - T cell receptor derived binding polypeptides therapies (PCT/EP2023/061716)
- Therapeutische Modulation von B7H6 als nicht-klassischer Immuncheckpoint in T-Zellen, TCR-transgenen-T-Zellen und CAR-T-Zell-Produkten (P-1621)