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Post-doctoral researcher

Education and Professional Qualifications

1998-2005	Master of Science, Peking University, China
2005-2008	PhD thesis at the Clinical Cooperation Unit Dermato-Oncology of the German Cancer Research Center (DKFZ) Heidelberg, Ruprecht-Karls Universität Heidelberg, exams for Dr. rer. nat. in 09/2008
Since 2009	Post-doctoral position, Klinik für Dermatologie, Universitätsklinikum Essen, Essen

Scientific Interests CD8⁺ T cells and their dysfunction mechanisms, tumor immune escape, melanoma, immunotherapy resistance

Awards 2005-2008, 3-year scholarship for international PhD program, German Cancer Research Center (DKFZ), Heidelberg
2018, Top young research paper award, University Hospital Essen, Germany
2019, Best poster price, 2nd Essen Translational Oncology Symposium, Germany
2021, Derma-Onkologie-Nachwuchspreis der ADF (Arbeitsgemeinschaft Dermatologie Forschung), Germany

Memberships Member of Deutschen Gesellschaft für Immunologie (DGFI)
Member of Association for Cancer Immunotherapy (CIMT)

Publications:

1. Schuler M, Cuppens K, Plönes T, Wiesweg M, Pont B.D, Hegedus B, Köster J, Mairinger F, Darwiche K, Paschen A, Maes B, Vanbockrijck M, Lähnemann D, **Zhao F**, Hautzel H, Theegarten D, Hartemink K, Reis H, Baas P, Schramm A & Aigner C. Neoadjuvant nivolumab with or without relatlimab in resectable non-small-cell lung cancer: a randomized phase 2 trial. *Nat Med* 2024. <https://doi.org/10.1038/s41591-024-02965-0>

2. Stupia S, Heeke C, Brüggemann A, Zaremba A, Thier B, Kretz J, Sucker A, Philip M, Zelinsky G, Ferrone S, Roesch A, Horn S, Hadaschik E, Schadendorf D, Trilling M, Dittmer U, Griewank K, Zhao F*, Paschen A*. HLA Class II Loss and JAK1/2 Deficiency Coevolve in Melanoma Leading to CD4 T-cell and IFN γ Cross-Resistance. *Clin Cancer Res.* 2023 Aug 1;29(15):2894-2907. <https://doi.org/10.1158/1078-0432.CCR-23-0099>. PMID: 37199727. *shared last authorship
3. Pozniak J, Pedri D, Landeloos E, Van Herck Y, Antoranz A, Vanwysberghe L, Nowosad A, Roda N, Makhzami S, Bervoets G, Maciel LF, Pulido-Vicuña CA, Pollaris L, Seurinck R, **Zhao F**, Flem-Karlsen K, Damsky W, Chen L, Karagianni D, Cinque S, Kint S, Vandereyken K, Rombaut B, Voet T, Vernailen F, Annaert W, Lambrechts D, Boecxstaens V, Saeys Y, van den Oord J, Bosisio F, Karras P, Shain AH, Bosenberg M, Leucci E, Paschen A, Rambow F, Bechter O, Marine JC. A TCF4-dependent gene regulatory network confers resistance to immunotherapy in melanoma. *Cell.* 2024 Jan 4;187(1):166-183.e25. <https://doi.org/10.1016/j.cell.2023.11.037>. PMID: 38181739.
4. Váraljai R, Zimmer L, Al-Matary Y, Kaptein P, Albrecht LJ, Shannan B, Brase JC, Gusenleitner D, Amaral T, Wyss N, Utikal J, Flatz L, Rambow F, Reinhardt HC, Dick J, Engel DR, Horn S, Ugurel S, Sondermann W, Livingstone E, Sucker A, Paschen A, **Zhao F**, Placke JM, Klose JM, Fendler WP, Thommen DS, Helfrich I, Schadendorf D, Roesch A. Interleukin 17 signaling supports clinical benefit of dual CTLA-4 and PD-1 checkpoint inhibition in melanoma. *Nat Cancer.* 2023 Sep;4(9):1292-1308. <https://doi.org/10.1038/s43018-023-00610-2>. PMID: 37525015.
5. Cammann C, Kulla J, Wiebusch L, Walz C, **Zhao F**, Lowinus T, Topfstedt E, Mishra N, Henklein P, Bommhardt U, Bossaller L, Hagemeyer C, Schadendorf D, Schmidt B, Paschen A, Seifert U. Proteasome inhibition potentiates Kv1.3 potassium channel expression as therapeutic target in drug-sensitive and -resistant human melanoma cells. *Biomed Pharmacother.* 2023 Dec;168:115635. <https://doi.org/10.1016/j.biopha.2023.115635>. Epub 2023 Oct 8. PMID: 37816303.
6. Thier B, **Zhao F**, Stupia S, Brüggemann A, Koch J, Schulze N, Horn S, Coch C, Hartmann G, Sucker A, Schadendorf D, Paschen A. Innate immune receptor signaling induces transient melanoma dedifferentiation while preserving immunogenicity. *J Immunother Cancer.* 2022 Jun;10(6):e003863. <https://doi.org/10.1136/jitc-2021-003863>. PMID: 35697379; PMCID: PMC9196182.
7. Harbers FN, Thier B, Stupia S, Zhu S, Schwamborn M, Peller V, Chauvistré H, Crivello P, Fleischhauer K, Roesch A, Sucker A, Schadendorf D, Chen Y, Paschen A, **Zhao F**. Melanoma Differentiation Trajectories Determine Sensitivity toward Pre-Existing CD8⁺ Tumor-Infiltrating Lymphocytes. *J Invest Dermatol.* 2021 Oct;141(10):2480-2489. <https://doi.org/10.1016/j.jid.2021.03.013>. Epub 2021 Mar 30. PMID: 33798535.
8. Such L, **Zhao F**, Liu D, Thier B, Le-Trilling VTK, Sucker A, Coch C, Pieper N, Howe S, Bhat H, Kalkavan H, Ritter C, Brinkhaus R, Ugurel S, Köster J, Seifert U, Dittmer U, Schuler M, Lang KS, Kufer TA, Hartmann G, Becker JC, Horn S, Ferrone S, Liu D, Van Allen EM, Schadendorf D, Griewank K, Trilling M, Paschen A. Targeting the innate immunoreceptor RIG-I overcomes melanoma-intrinsic resistance to T cell immunotherapy. *J Clin Invest.* 2020 Aug 3;130(8):4266-4281. <https://doi.org/10.1172/JCI131572>. PMID: 32427578; PMCID: PMC7410049.
9. Sun W*, **Zhao F***, Xu Y, Huang K, Guo X, Zheng B, Liu X, Luo Z, Kong Y, Xu M, Schadendorf D, Chen Y. Chondroitin polymerizing factor (CHPF) promotes development of malignant

melanoma through regulation of CDK1. *Cell Death Dis.* 2020. Jul 1;11(7):496. <http://doi.org/10.1038/s41419-020-2526-9>. PMID: 32612115; PMCID: PMC7329816. *shared first authorship

10. Textoris-Taube K, Cammann C, Henklein P, Topfstedt E, Ebstein F, Henze S, Liepe J, **Zhao F**, Schadendorf D, Dahlmann B, Uckert W, Paschen A, Mishto M, Seifert U. ER-aminopeptidase 1 determines the processing and presentation of an immunotherapy-relevant melanoma epitope. *Eur J Immunol.* 2020 Feb;50(2):270-283. <https://doi.org/10.1002/eji.201948116>. Epub 2019 Nov 27. PMID: 31729751.
11. Pieper N, Zaremba A, Leonardelli S, Harbers FN, Schwamborn M, Lübcke S, Schrörs B, Baingo J, Schramm A, Haferkamp S, Seifert U, Sucker A, Lennerz V, Wölfel T, Schadendorf D, Schilling B, Paschen A, **Zhao F**. Evolution of melanoma cross-resistance to CD8⁺ T cells and MAPK inhibition in the course of BRAFi treatment. *Oncoimmunology.* 2018 Apr 18;7(8):e1450127. <http://doi.org/10.1080/2162402X.2018.1450127>. PMID: 30221038; PMCID: PMC6136878.
12. Sucker A, **Zhao F**, Pieper N, Heeke C, Maltaner R, Stadtler N, Real B, Bielefeld N, Howe S, Weide B, Gutzmer R, Utikal J, Loquai C, Gogas H, Klein-Hitpass L, Zeschnigk M, Westendorf AM, Trilling M, Horn S, Schilling B, Schadendorf D, Griewank KG, Paschen A. Acquired IFN γ resistance impairs anti-tumor immunity and gives rise to T-cell-resistant melanoma lesions. *Nat Commun.* 2017 May 31;8:15440. <http://doi.org/10.1038/ncomms15440>. PMID: 28561041; PMCID: PMC5460020.
13. **Zhao F**, Sucker A, Horn S, Heeke C, Bielefeld N, Schrörs B, Bicker A, Lindemann M, Roesch A, Gaudernack G, Stiller M, Becker JC, Lennerz V, Wölfel T, Schadendorf D, Griewank K, Paschen A. Melanoma Lesions Independently Acquire T-cell Resistance during Metastatic Latency. *Cancer Res.* 2016 Aug 1;76(15):4347-58. <http://doi.org/10.1158/0008-5472.CAN-16-0008>. Epub 2016 Jun 3. PMID: 27261508.
14. Keller M, Ebstein F, Bürger E, Textoris-Taube K, Gorny X, Urban S, **Zhao F**, Dannenberg T, Sucker A, Keller C, Saveanu L, Krüger E, Rothkötter HJ, Dahlmann B, Henklein P, Voigt A, Kuckelkorn U, Paschen A, Kloetzel PM, Seifert U. The proteasome immunosubunits, PA28 and ER-aminopeptidase 1 protect melanoma cells from efficient MART-126-35 -specific T-cell recognition. *Eur J Immunol.* 2015 Dec;45(12):3257-68. <http://doi.org/10.1002/eji.201445243>. Epub 2015 Oct 19. PMID: 26399368.
15. Ullrich N, Löffek S, Horn S, Ennen M, Sánchez-Del-Campo L, **Zhao F**, Breitenbuecher F, Davidson I, Singer BB, Schadendorf D, Goding CR, Helfrich I. MITF is a critical regulator of the carcinoembryonic antigen-related cell adhesion molecule 1 (CEACAM1) in malignant melanoma. *Pigment Cell Melanoma Res.* 2015 Nov;28(6):736-40. <http://doi.org/10.1111/pcmr.12414>. PMID: 26301891.
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18. Schilling B, Sucker A, Griewank K, **Zhao F**, Weide B, Görgens A, Giebel B, Schadendorf D, Paschen A. Vemurafenib reverses immunosuppression by myeloid derived suppressor cells. *Int J Cancer*. 2013 Oct 1;133(7):1653-63. <http://doi.org/10.1002/ijc.28168>. Epub 2013 Apr 13. PMID: 23526263.
19. Heinemann A, **Zhao F**, Pechlivanis S, Eberle J, Steinle A, Diederichs S, Schadendorf D, Paschen A. Tumor suppressive microRNAs miR-34a/c control cancer cell expression of ULBP2, a stress-induced ligand of the natural killer cell receptor NKG2D. *Cancer Res*. 2012 Jan 15;72(2):460-71. <http://doi.org/10.1158/0008-5472.CAN-11-1977>. Epub 2011 Nov 18. PMID: 22102694.
20. Urban S, Textoris-Taube K, Reimann B, Janek K, Dannenberg T, Ebstein F, Seifert C, **Zhao F**, Kessler JH, Halenius A, Henklein P, Paschke J, Cadel S, Bernhard H, Ossendorp F, Foulon T, Schadendorf D, Paschen A, Seifert U. The efficiency of human cytomegalovirus pp65 (495-503) CD8⁺ T cell epitope generation is determined by the balanced activities of cytosolic and endoplasmic reticulum-resident peptidases. *J Immunol*. 2012 Jul 15;189(2):529-38. <http://doi.org/10.4049/jimmunol.1101886>. Epub 2012 Jun 15. PMID: 22706083.
21. **Zhao F**, Falk C, Osen W, Kato M, Schadendorf D, Umansky V. Activation of p38 mitogen-activated protein kinase drives dendritic cells to become tolerogenic in ret transgenic mice spontaneously developing melanoma. *Clin Cancer Res*. 2009 Jul 1;15(13):4382-90. <http://doi.org/10.1158/1078-0432.CCR-09-0399>. Epub 2009 Jun 23. PMID: 19549770.