UNIVERSITÄT DUISBURG ESSEN

Offen im Denken

15th Summer Academy "Infection and Immunity"
Lecture 5 on Wednesday, 29 July, 2026

Prof. Dr. Sven Brandau

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"Tumor Immunology and Immunotherapy"

Publications for seminar preparation:

1. Szlachetko JA, Hofmann-Vega F, Budeus B, Schröder LJ, Dumitru CA, Schmidt M, Deuss E, Vollmer S, Hanschmann EM, Busch M, Kehrmann J, Lang S, Dünker N, Hussain T, Brandau S. (2025) Tumor cells that resist neutrophil anticancer cytotoxicity acquire a prometastatic and innate immune escape phenotype. Cell Mol Immunol. 2025 May;22(5):527-540. doi: 10.1038/s41423-025-01283-w. Epub 2025 Mar 28. PMID: 40155451; PMCID: PMC12041228. https://pubmed.ncbi.nlm.nih.gov/40155451/

2. Pettinella F, Mariotti B, Lattanzi C, Bruderek K, Donini M, Costa S, Marini O, Iannoto G, Gasperini S, Caveggion E, Castellucci M, Calzetti F, Bianchetto-Aguilera F, Gardiman E, Giani M, Dusi S, Cantini M, Vassanelli A, Pavone D, Milella M, Pilotto S, Biondani P, Höing B, Schleupner MC, Hussain T, Hadaschik B, Kaspar C, Visco C, Tecchio C, Koenderman L, Bazzoni F, Tamassia N, Brandau S, Cassatella MA, Scapini P. (2024) Surface CD52, CD84, and PTGER2 mark mature PMN-MDSCs from cancer patients and G-CSF-treated donors. Cell Rep Med. 2024 Feb 20;5(2):101380. doi: 10.1016/j.xcrm.2023.101380 https://pubmed.ncbi.nlm.nih.gov/38242120/

3. Hackel A, Aksamit A, Bruderek K, Lang S, **Brandau S.** (2021) TNF-alpha and IK-1beta sensitize human MSC for IFN-gamma signaling and enhance neutrophil recruitment. Eur J Immunol. 2021 Feb;51(2):319-330 https://pubmed.ncbi.nlm.nih.gov/32845509/

4. Cassetta L, Bruderek K, Skrzeczynska-Moncznik J, Osiecka O, Hu X, Rundgren IM, Lin A, Santegoets K, Horzum U, Godinho-Santos A, Zelinskyy G, Garcia-Tellez T, Bjelica S, Taciak B, Kittang AO, Höing B, Lang S, Dixon M, Müller V, Utikal JS, Karakoç D, Yilmaz KB, Górka E, Bodnar L, Anastasiou OE, Bourgeois C, Badura R, Kapinska-Mrowiecka M, Gotic M, Ter Laan M, Kers-Rebel E, Król M, Santibañez JF, Müller-Trutwin M, Dittmer U, de Sousa AE, Esendağlı G, Adema G, Loré K, Ersvær E, Umansky V, Pollard JW, Cichy J, **Brandau S,** (2020) Differential expansion of circulating human MDSC subsets in patients with cancer, infection and inflammation. J Immunother Cancer. 2020 Sep; 8(2): e001223 https://pubmed.ncbi.nlm.nih.gov/32907925/

5. Si Y, Merz SF, Jansen P, Wang B, Bruderek K, Altenhoff P, Mattheis S, Lang S, Gunzer M, Klode J, Squire A, **Brandau S**, (2019) Multidimensional imaging provides evidence for down-regulation of T cell effector function by MDSC in human cancer tissue. Sci Immunol. 4(40),eaaw9159. https://pubmed.ncbi.nlm.nih.gov/31628161/

6. Lang S, Bruderek K, Kaspar C, Höing B, Kanaan O, Dominas N, Hussain T, Droege F, Eyth C, Hadaschik B, **Brandau S**. (2018) Clinical Relevance and Suppressive Capacity of Human Myeloid-Derived Suppressor Cell Subsets. Clin Cancer Res. 24(19):4834-4844. https://pubmed.ncbi.nlm.nih.gov/29914893/

7. Klein JC, Moses K, Zelinskyy G, Sody S, Buer J, Lang S, Helfrich I, Dittmer U, Kirschning CJ*, **Brandau** S*. (2017) Combined toll-like receptor 3/7/9 deficiency on host cells results in T-cell-dependent control of tumour growth. Nat Commun. 8:14600. *co-senior authors https://pubmed.ncbi.nlm.nih.gov/28300057/

8. Kansy BA, Concha-Benavente F, Srivastava RM, Jie HB, Shayan G, Lei Y, Moskovitz J, Moy J, Li J, **Brandau S**, Lang S, Schmitt NC, Freeman GJ, Gooding WE, Clump DA, Ferris RL. (2017) PD-1 Status in CD8(+) T Cells Associates with Survival and Anti-PD-1 Therapeutic Outcomes in Head and Neck Cancer. Cancer Res. 77(22):6353-6364. https://pubmed.ncbi.nlm.nih.gov/28904066/

9. Bronte V, **Brandau S,** Chen SH, Colombo MP, Frey AB, Greten TF, Mandruzzato S, Murray PJ, Ochoa A, Ostrand-Rosenberg S, Rodriguez PC, Sica A, Umansky V, Vonderheide RH, Gabrilovich DI. (2016) Recommendations for myeloid-derived suppressor cell nomenclature and characterization standards. Nat Commun. 7:12150. https://pubmed.ncbi.nlm.nih.gov/27381735/

10. Hasenberg A, Hasenberg M, Männ L, Neumann F, Borkenstein L, Stecher M, Kraus A, Engel DR, Klingberg A, Seddigh P, Abdullah Z, Klebow S, Engelmann S, Reinhold A, **Brandau** S, Seeling M, Waisman A, Schraven B, Göthert JR, Nimmerjahn F, Gunzer M. (2015) Catchup: a mouse model for imaging-based tracking and modulation of neutrophil granulocytes. Nat Methods. 12(5):445-52 https://pubmed.ncbi.nlm.nih.gov/25775045/

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We have a special interest in the immunological tumor-host interaction with a particular focus on neutrophils and myeloid-derived suppressor cells. A second research theme of the division aims at better understanding the immunoregulatory properties of so-called mesenchymal stromal cells. In the last ten years we have authored or co-authored over 150 peer-reviewed publications, some of which are highly cited.
Over the last ten years we have established and worked on the following three main research themes:

- Immunoregulatory mechanisms in tumor-host interaction
- Immunological and biological tumor therapy
- Immunobiology of mesenchymal stromal cells