

Curriculum Vitae

Prof. Dr. rer. nat. Armin Braun, is Division Director of the Preclinical Pharmacology and Toxicology of the Fraunhofer Institute for Toxicology and Experimental Medicine. His main focus is the preclinical development and evaluation of new drugs for airway and immune diseases. Both safety and efficacy testings are performed under highest quality standard including GLP. He is deputy head of the Fraunhofer GLP facility in Hannover. Partners are the major pharmaceutical and biotech companies from Europe, US and Japan. Therefore, he has extensive experience with animal models of immune mediated lung disease like asthma, COPD or lung infection. In addition, immunotoxicology is an important field of expertise and he is acting as work package lead in the IMI EU project **ImSAVAR** (Immune safety avatar: nonclinical mimicking of the immune system effects of immunomodulatory therapies). Based on his knowledge alternative *in vitro* and *ex vivo* models are developed. Special focus is given to human organotypic tissue culture systems e.g. using precision cut lung slice (PCLS) technique for testing lung toxicology, immune regulation and infection. In addition, tissue slices from lymph nodes, liver, heart, skin, colon and tumors are used and combined with microphysiological systems (MPS). New developments include the use of iPSC derived macrophages for diagnostic and therapeutic applications.

Immunological diagnosis in preclinical studies is performed by immunohistological staining techniques using confocal microscopy, flow cytometric analysis and biomarker quantification in bronchoalveolar lavage fluid and blood. His scientific work is funded by different EU and federal research agencies. He is member of the **German center of lung research (DZL)** and is coordinating **iCAIR** (Fraunhofer International Consortium for Anti-Infective Research), a collaboration project between Griffith University, Australia and Medical University Hannover MHH in Germany with Fraunhofer ITEM. Recently the **iGUARD** (integrated Guided Ultrafast Antiviral RNAi Drug development) was funded by the newly established SPRIND (Bundesagentur für Sprunginnovationen). Prof. Braun has a strong background in basic research and is involved in several public funded research collaborations e.g. with the MHH where he is acting as a Professor for Immunology of the respiratory tract. He has published more than 150 reports in international journals.



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Birth 27.04.1969

Academic Education

2006	Habilitation and "venia legendi" in Immunology at Medical School Hannover
1995 - 1999	PhD work, Prof. Dr. Renz, "The role of NGF in allergic asthma"
1994 - 1995	Diploma work, University Basel, "Interleukin-6 induced modulation of the NGF receptor system"
1990 - 1994	Studies in biology, Albert Ludwigs University, Freiburg
1988 - 1990	Studies in molecular biology University of Basel, Switzerland

Employment

Since 2014	Division Director Preclinical Pharmacology and Toxicology
Since 2001	Head of the Department of Airway Immunology, Fraunhofer Institute of Toxicology and Experimental Medicine
1999-2001	Scientific Assistant ("post doc"), Prof. Dr. Renz, Department of Laboratory Medicine, Philipps-University Marburg, Germany
1995-1999	PhD work, Prof. Dr. Renz, Department of Laboratory Medicine, Charité, Humboldt University Berlin, Germany, "The role of NGF in allergic asthma"

Grants and Fellowships

2008	DGAKI-Nachwuchsförderpreis 2008
2005	Research Price of the German Society of Pneumology
2004	Herbert-Herxheimer-Award

Appointments and Services

2011	Professor (W2) for Immunology of the Respiratory Tract at Medical School Hannover
2007	Assistant Professor for Immunology at the Medical School Hannover

Ten most important publications

1. Synergistic inhibition of SARS-CoV-2 cell entry by otamixaban and covalent protease inhibitors: pre-clinical assessment of pharmacological and molecular properties. Hempel T, Elez K, Krüger N, Raich L, Shrimp JH, Danov O, Jonigk D, **Braun A**, Shen M, Hall MD, Pöhlmann S, Hoffmann M, Noé F. *Chem Sci*. 2021 Aug 26;12(38):12600-12609. doi: 10.1039/d1sc01494c. eCollection 2021 Oct 6. PMID: 34703545 Free PMC article.
2. Rhinovirus-induced Human Lung Tissue Responses Mimic Chronic Obstructive Pulmonary Disease and Asthma Gene Signatures. Wronski S, Beinke S, Obernolte H, Belyaev NN, Saunders KA, Lennon MG, Schaudien D, Braubach P, Jonigk D, Warnecke G, Zardo P, Fieguth HG, Wilkens L, **Braun A**, Hessel EM, Sewald K. *Am J Respir Cell Mol Biol*. 2021 Nov;65(5):544-554. doi: 10.1165/rcmb.2020-0337OC. PMID: 34181859
3. Disruptive anti-IgE inhibitors prevent mast cell-dependent early airway response in viable atopic lung tissue. Delgado SJ, Dehmel S, Twisterling E, Wichmann J, Jonigk D, Warnecke G, Braubach P, Fieguth HG, Wilkens L, Dahlmann F, Kaup FJ, Eggel A, Knauf S, Sewald K, **Braun A**. *J Allergy Clin Immunol*. 2020 Feb;145(2):719-722.
4. Human lung tissue provides highly relevant data about efficacy of new anti-asthmatic drugs. Danov O, Jiménez Delgado SM, Obernolte H, Seehase S, Dehmel S, Braubach P, Fieguth HG, Matschiner G, Fitzgerald M, Jonigk D, Knauf S, Pfennig O, Warnecke G, Wichmann J, **Braun A**, Sewald K. *PLoS One*. 2018 Nov 30;13(11):e0207767.
5. Aeroallergen challenge promotes dendritic cell proliferation in the airways. Veres TZ, Voedisch S, Spies E, Valtonen J, Prenzler F, **Braun A**. *J Immunol*. 2013 Feb 1;190(3):897-903. doi: 10.4049/jimmunol.1200220. Epub 2012 Dec 24.
6. Neuropeptides control the dynamic behavior of airway mucosal dendritic cells. Voedisch S, Rochlitzer S, Veres TZ, Spies E, **Braun A**. *PLoS One*. 2012;7(9):e45951. doi: 10.1371/journal.pone.0045951. Epub 2012 Sep 26.
7. Dendritic cell-nerve clusters are sites of T cell proliferation in allergic airway inflammation. Veres TZ, Shevchenko M, Krasteva G, Spies E, Prenzler F, Rochlitzer S, Tschernig T, Krug N, Kummer W, **Braun A**. *Am J Pathol*. 2009;174:808-17
8. Neuroimmune crosstalk in asthma: dual role of the neurotrophin receptor p75NTR. Nassenstein C, Kammertoens T, Veres TZ, Uckert W, Spies E, Fuchs B, Krug N, **Braun A**. *J Allergy Clin Immunol* 2007;120:1089-96.
9. Spatial interactions between dendritic cells and sensory nerves in allergic airway inflammation. Veres TZ, Rochlitzer S, Shevchenko M, Fuchs B, Prenzler F, Nassenstein C, Fischer A, Welker L, Holz O, Müller M, Krug N, **Braun A**. *Am J Respir Cell Mol Biol* 2007;37:553-61.
10. The neurotrophins nerve growth factor, brain-derived neurotrophic factor, neurotrophin-3, and neurotrophin-4 are survival and activation factors for eosinophils in patients with allergic bronchial asthma. Nassenstein C, **Braun A**, Erpenbeck VJ, Lommatzsch M, Schmidt S, Krug N, Luttmann W, Renz H, Virchow JC Jr. *J Exp Med*. 2003;198(3):455-67.

Funded Projects (≈12 million Euro in total since 2001) active 2016 – 2023

DFG	FOR 2127: Selection and Adaptation during Metastatic Cancer Progression Systematic analysis of metastatic cancer: Central mouse and in vitro projects (2018–2022)
DFG	SPP 1394: Mast Cells - Promoters of Health and Modulators of Disease: Characterization of mast cell anatomy and function in primate airways - interaction with the nervous system(2012–2017)
BMBF DZL	Biomedical Research in Endstage and Obstructive Lung Disease Hannover (BREATH), (2011–2023)
BMBF	Rebirth Excellence Cluster Regeneration, Toxicology of cell therapy products 2014–2022
BMBF	InhalAb - Alternativmodelle zur Prüfung inhalierbarer Antibiotika " (2017–2022)
EU IMI	ImSAVAR Immune safety avatar: nonclinical mimicking of the immune system effects of immunomodulatory therapies (2019–2025)
SPRIND	iGUARD integrated Guided Ultrafast Antiviral RNAi Drug development (2021-2022)

Additional Fraunhofer,-, BMBF-,, EU- etc. funded projects as well as industrial project are running according to the Fraunhofer Funding Scheme.

The full list of publications can be found here:

<https://publons.com/researcher/2864649/armin-braun/>