

Curriculum Vitae

Katherina Sewald Dr. med.

November 21st, 1974, in Zwenkau, Germany

University Education

- 2002-2005 Postdoc, Genetics, University Bielefeld, Germany
Study of Human Medicine, Ruhr-University Bochum, Germany
- 2001-2002 Postdoc, Organic Chemistry, University Leipzig and University Bielefeld, Germany,
- 1998-2001 PhD with *summa cum laude*, Institute of Organic Chemistry, University Leipzig, Germany
- 1997-1998 Diploma Thesis, Institute of Biochemistry, University Leipzig, Germany
- 1993-1998 Study of Biochemistry, University Leipzig, Germany

Scientific Career

- Since 2017 Deputy Head of Division Preclinical Pharmacology and Toxicology and Head of Department Preclinical Pharmacology and In Vitro Toxicology, Fraunhofer ITEM, Hanover
- 2015-2017 Head of Department Preclinical Pharmacology and Immunology and Head of Stem Cell Therapy Research Group, Fraunhofer ITEM, Hanover
- 2014-2015 Deputy Head of Division Preclinical Pharmacology and In Vitro Toxicology and Deputy Head of Department Respiratory Immunology, Fraunhofer ITEM, Hanover
- 2011-2015 Research Group Leader Immunopharmacology and Immunotoxicology, Fraunhofer ITEM, Hanover
- 2005-2010 Postdoc researcher, Department of Immunology at Fraunhofer ITEM, Hanover, with Prof Dr A. Braun

Committees

- Up to now Expert for international journals, e.g. Allergy, ATOX, Biomedicines, BMC Immunology, F1000 Research, Frontiers in Immunology, Molecular and Cellular Biochemistry, JOVE, Nanotoxicology, PLOS ONE, Toxicology Letters, Toxicology in Vitro, Viruses
- Since 2021 Member of the expert group ILSI Europe Task Force on Alternatives to Animal Testing in Food Safety, Nutrition and Efficacy Studies
- Since 2020 Coordinator Fraunhofer Cluster of Excellence Immune-Mediated Diseases Platform 'Alternatives to Animal Testing'
- 2020 Author of the Fraunhofer Society's position paper on animal testing and alternatives to animal testing
- Since 2020 Member of the Steering Committee *Basic Research in Allergy and Asthma* of the German Centre for Lung Research (DZL)
- Since 2018 Member of the German Centre for Lung Research (DZL)
- Since 2016 Mentor as part of the Fraunhofer Excellence Programme
- 2015-2017 Selected and funded as a participant in the personal development programme Fraunhofer TALENTA *excellence*
- Since 2015 Steering committee of the working group 'Respiratory Toxicity'
- 2015 Steering committee of the working group 'Translational Aspects of in vitro and in vivo Models for Inflammatory Diseases'

Awards

- 2020 Sommer C, Cramer N, Müller L, Danov O, Tümmler B, Braun A, Sewald K, Wronski S, Dehmel S, Brandenberger C. Neutrophil granulocyte effector responses to *Pseudomonas aeruginosa* lung infection exhibit age related changes. Poster Award, Annual Meeting German Centre for Lung Research, 2020.
- 2016 Wichmann, J., Jiménez-Delgado, S., E. Cabral Serrao, C. Curths, A. Schmitt, S. Dunker, D. Jonigk, P. Braubach, F.-J. Kaup, A. Braun, F. Dahlmann, A. Eggel, K. Sewald, and S. Knauf (2016): A novel disruptive IgE inhibitor: Efficacy assessment in non-human primate and human precision-cut lung slices." Poster Prize for the best poster in the effector mechanisms session", European Academy of Allergy and Clinical Immunology Congress, June 11 - 15, 2016, Vienna, Austria
- 2016 Konzok S., Braubach, P., Warnecke, G., Jonigk, D., Pfennig, O., Fieguth, H.-G., Braun, A., Sewald, K. Different pathways of inflammasome activation through bacterial and viral PAMPs and cellular DAMPs in human lung tissue ex vivo. Poster Award, 5th Annual Meeting German Centre for Lung Research, Hannover (Germany), February 1-2, 2016.
- 2015 Jiménez-Delgado, S.M., Schindler, S., Sewald, K., Armin, B. Passively sensitized human organotypic tissue as asthma model to study mast cell-nerve interaction. Poster Award, Congress European Academy of Allergy and Clinical Immunology, Barcelona (Spain), June, 2015.
- 2009 Sewald, K., Switalla, S., Wang, L., Pfennig, O., Förster, C., Krug, N., Braun, A. Respiratory toxicology and immunotoxicology in human precision-cut lung slices (PCLS). Prize for young scientists 2009, 46th Congress of the European Societies of Toxicology, Dresden (Germany), September 13-16, 2009.

Top-10 selected Publications

- [1] Rade, M., Böhlen, S., Neuhaus, V., Löffler, D., Blumert, C., Merz, M., Köhl, U., Dehmel, S., Sewald, K., & Reiche, K. (2023). A time-resolved meta-analysis of consensus gene expression profiles during human T-cell activation. *Genome biology*, 24(1), 287. <https://doi.org/10.1186/s13059-023-03120-7>. DOI.
- [2] Wronski, S., Beinke, S., Obernolte, H., Belyaev, N. N., Saunders, K. A., Lennon, M. G., Schaudien, D., Braubach, P., Jonigk, D., Warnecke, G., Zardo, P., Fieguth, H. G., Wilkens, L., Braun, A., Hessel, E. M., & Sewald, K. (2021). Rhinovirus-induced Human Lung Tissue Responses Mimic Chronic Obstructive Pulmonary Disease and Asthma Gene Signatures. *American journal of respiratory cell and molecular biology*, 65(5), 544–554. <https://doi.org/10.1165/rcmb.2020-03370C>. DOI.
- [3] Delgado, S. J., Dehmel, S., Twisterling, E., Wichmann, J., Jonigk, D., Warnecke, G., Braubach, P., Fieguth, H. G., Wilkens, L., Dahlmann, F., Kaup, F. J., Eggel, A., Knauf, S., Sewald, K., & Braun, A. (2020). Disruptive anti-IgE inhibitors prevent mast cell-dependent early airway response in viable atopic lung tissue. *The Journal of allergy and clinical immunology*, 145(2), 719–722.e1. <https://doi.org/10.1016/j.jaci.2019.11.002>. DOI.
- [4] Obernolte, H., Niehof, M., Braubach, P., Fieguth, H. G., Jonigk, D., Pfennig, O., Tschernig, T., Warnecke, G., Braun, A., & Sewald, K. (2022). Cigarette smoke alters inflammatory genes and the extracellular matrix - investigations on viable sections of peripheral human lungs. *Cell and tissue research*, 387(2), 249–260. <https://doi.org/10.1007/s00441-021-03553-1>. DOI.
- [5] Neuhaus, V., Danov, O., Konzok, S., Obernolte, H., Dehmel, S., Braubach, P., Jonigk, D., Fieguth, H. G., Zardo, P., Warnecke, G., Martin, C., Braun, A., & Sewald, K. (2018). Assessment of the Cytotoxic and Immunomodulatory Effects of Substances in Human Precision-cut Lung Slices. *Journal of visualized experiments : JoVE*, (135), 57042. <https://doi.org/10.3791/57042>. DOI.
- [6] Sommer, C., Jacob, S., Bargmann, T., Shoaib, M., Alshaikhdeeb, B., Satagopam, V. P., Dehmel, S., Neuhaus, V., Braun, A., & Sewald, K. (2024). Bridging therapy-induced phenotypes and genetic immune

- dysregulation to study interleukin-2-induced immunotoxicology. *Clinical immunology* (Orlando, Fla.), 266, 110288. <https://doi.org/10.1016/j.clim.2024.110288>
- [7] Beneke, V., Grieger, K. M., Hartwig, C., Müller, J., Sohn, K., Blaudszun, A. R., Hilger, N., Schaudien, D., Fricke, S., Braun, A., Sewald, K., & Hesse, C. (2024). Homeostatic T helper 17 cell responses triggered by complex microbiota are maintained in ex vivo intestinal tissue slices. *European journal of immunology*, 54(8), e2350946. <https://doi.org/10.1002/eji.202350946>
- [8] Sommer, C., Cohen, J. N., Dehmel, S., Neuhaus, V., Schaudien, D., Braun, A., Sewald, K., & Rosenblum, M. D. (2024). Interleukin-2-induced skin inflammation. *European journal of immunology*, 54(4), e2350580. <https://doi.org/10.1002/eji.202350580>
- [9] Zimniak, M., Kirschner, L., Hilpert, H., Geiger, N., Danov, O., Oberwinkler, H., Steinke, M., Sewald, K., Seibel, J., & Bodem, J. (2021). The serotonin reuptake inhibitor Fluoxetine inhibits SARS-CoV-2 in human lung tissue. *Scientific reports*, 11(1), 5890. <https://doi.org/10.1038/s41598-021-85049-0>
- [10] Ackermann, M., Kempf, H., Hetzel, M., Hesse, C., Hashtchin, A. R., Brinkert, K., Schott, J. W., Haake, K., Kühnel, M. P., Glage, S., Figueiredo, C., Jonigk, D., Sewald, K., Schambach, A., Wronski, S., Moritz, T., Martin, U., Zweigerdt, R., Munder, A., & Lachmann, N. (2018). Bioreactor-based mass production of human iPSC-derived macrophages enables immunotherapies against bacterial airway infections. *Nature communications*, 9(1), 5088. <https://doi.org/10.1038/s41467-018-07570-7>