

Curriculum Vitae

Holger Heine Professor, Dr. rer.nat.
d.o.b. January 13th, 1966, in Neumünster, Germany

Research Center Borstel - Leibniz Lung Center
Head, Research Group Innate Immunity
Deputy Director, Priority Area Chronic Lung Diseases

University Education

2013 Adjunct Professor, Faculty of Mathematics and Natural Sciences, CAU Kiel 2004
Habilitation Immunology and Cell Biology, CAU Kiel
1995 Doctorate Ph.D., CAU Kiel
1987–1992 Studies of Biology, Christian-Albrechts-University (CAU) Kiel

Scientific Career

Since 2019 Deputy Director, Priority Area Chronic Lung Diseases, Research Center Borstel –
Leibniz Lung Center, Borstel, Germany
Since 2004 Head, Research Group, Division of Innate Immunity, Department of
Immunology and Cell Biology, Research Center Borstel, Borstel, Germany
2002–2004 Junior Research Group Leader, Division of Innate Immunity, Department of
Immunology and Cell Biology, Research Center Borstel, Borstel, Germany
1999–2001 Postdoctoral Fellow, Department of Immunology and Cell Biology, Research
Center Borstel, Borstel, Germany
1996–1999 Postdoctoral Fellow, Maxwell Finland Laboratory for Infectious Diseases, Boston
Medical Center, Boston, USA
1993-1995 PhD student, Research Center Borstel, Borstel, Germany

Citation Record

Total citations: 14,756; h-index: 54; h-index since 2021: 32 (Google Scholar March 23rd, 2026)

Top-10 selected Publications

Fu Y, Kim H, Lee DS, Han AR, **Heine H**, Zamyatina A, Kim HM: Structural insight into TLR4/MD-2 activation by synthetic LPS mimetics with distinct binding modes. **Nat Commun** 2025, 16(1):416410.1038/s41467-025-59550-3.

Krause K, Franch Arroyo S, Ugolini M, Kueck T, Sullivan TJ, Galvez EJC, Muenzner M, Goosmann C, Brinkmann V, Frese CK, Alagesan K, Vierbuchen T, **Heine H**, Resch U, Sander LE, Charpentier E: Streptococcus pyogenes EVs induce the alternative inflammasome via caspase-4/-5 in human monocytes. **EMBO reports** 2025, 26(19):4847–4885.10.1038/s44319-025-00558-7.

Kuehnast T, Kumpitsch C, Mohammadzadeh R, Weichhart T, Moissl-Eichinger C, **Heine H**: Exploring the human archaeome: its relevance for health and disease, and its complex interplay with the human immune system. **FEBS journal** 2025, 292(6):1316–1329.10.1111/febs.17123.

Strobl S, Zucchetta D, Vasicek T, Monti A, Ruda A, Widmalm G, **Heine H**, Zamyatina A: Nonreducing Sugar Scaffold Enables the Development of Immunomodulatory TLR4-specific LPS Mimetics with Picomolar Potency. **Angew Chem Int Ed Engl** 2024, 63(39):e202408421.10.1002/anie.202408421.

Brandenburg J, Marwitz S, Tazoll SC, Waldow F, Kalsdorf B, Vierbuchen T, Scholzen T, Gross A, Goldenbaum S, Holscher A, Hein M, Linnemann L, Reimann M, Kispert A, Leitges M, Rupp J, Lange C, Niemann S, Behrends J, Goldmann T, **Heine H**, Schaible UE, Holscher C, Schwudke D, Reiling N: WNT6/ACC2-induced storage of triacylglycerols in macrophages is exploited by Mycobacterium tuberculosis. **J Clin Invest** 2021, 131(16):10.1172/JCI141833.

Stein K, Brand S, Jenckel A, Sigmund A, Chen ZJ, Kirschning CJ, Kauth M, **Heine H**: Endosomal recognition of Lactococcus lactis G121 and its RNA by dendritic cells is key to its allergy-protective effects. **J Allerg Clin Immunol** 2017, 139(2):667–678 e66510.1016/j.jaci.2016.06.018.

Vierbuchen T, Bang C, Rosigkeit H, Schmitz RA, **Heine H**: The Human-Associated Archaeon Methanosphaera stadtmanae Is Recognized through Its RNA and Induces TLR8-Dependent NLRP3 Inflammasome Activation. **Front Immunol** 2017, 8:153510.3389/fimmu.2017.01535.

Bang C, Weidenbach K, Gutsmann T, **Heine H**, Schmitz RA: The intestinal archaea Methanosphaera stadtmanae and Methanobrevibacter smithii activate human dendritic cells. **PloS one** 2014, 9(6):e9941110.1371/journal.pone.0099411.

Debarry J, Garn H, Hanuszkiewicz A, Dickgreber N, Blumer N, von Mutius E, Bufe A, Gatermann S, Renz H, Holst O, **Heine H**: Acinetobacter lwoffii and Lactococcus lactis strains isolated from farm cowsheds possess strong allergy-protective properties. **J Allerg Clin Immunol** 2007, 119(6):1514–152110.1016/j.jaci.2007.03.023.

Heine H, Kirschning CJ, Lien E, Monks BG, Rothe M, Golenbock DT: Cutting edge: cells that carry a null allele for toll-like receptor 2 are capable of responding to endotoxin. **J Immunol** 1999, 162(12):6971–697510.4049/jimmunol.162.12.6971.