

**Dr. Suneesh Kumar Pachathundikandi, PhD**

Associate Professor  
Department of Environmental Microbiology  
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## *Academic Profile*

- **Doctor of Philosophy in Immunology (2003 – 2009)**  
University of Calicut, Kerala, India & Otto-von-Guericke University, Magdeburg, Germany (Under ICMR & DAAD Fellowships)
- **Master of Applied Science (1995-1998)**  
First Class  
Mahatma Gandhi University, Kottayam, Kerala, India
- **Bachelor of Science (1992-1995)**  
First Class  
University of Calicut, Malappuram, Kerala, India

## *Professional Experience*

- **Associate Professor**  
Department of Environmental Microbiology, Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, INDIA **07.01.2022 – till date**
- **Research Consultant (Self-employment)**  
S&J Biomotech, Kannur, Kerala, INDIA **01.2020 – 12.2021**
- **Senior Scientist**  
Chair of Microbiology, Department of Biology, Friedrich-Alexander University Erlangen-Nuremberg, GERMANY **07.2015 – 06.2019**
- **Senior Scientist**  
Chair of Microbiology, Department of Biology, Friedrich-Alexander University Erlangen-Nuremberg, GERMANY **01.2013 – 05.2015**
- **Scientist cum Lecturer**  
SCMS Institute for Bioscience and Biotechnology Research & Development, Kochi-682033, Kerala, INDIA. **07.2010 – 12.2012**
- **Staff Scientist**  
Institute for Medical Microbiology, Otto von Guericke University, Magdeburg, GERMANY. **04.2009 – 12.2009**
- **DAAD (German Academic Exchange Service) Research Fellow**  
Institute for Medical Microbiology, Otto von Guericke University, Magdeburg, GERMANY. **10.2006 – 09.2008**
- **ICMR (Indian Council of Medical Research) Research Fellow (JRF & SRF)**  
Department of Biotechnology, University of Calicut, Kerala, INDIA. **03.2003 – 05.2006**

- **Project Fellow (Unilever)**  
School of Biotechnology, Madurai Kamaraj University, Madurai, Tamil Nādu, INDIA. **11.2001 – 08.2002**
- **Research Assistant**  
Division of Pathology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Thiruvananthapuram, Kerala, INDIA. **03.2000 – 09.2001**

### ***Achievement/Fellowship***

- **Post-doctoral Fellowship** from German Science Foundation (DFG CRC1181) at Chair of Microbiology, Department of Biology, Friedrich-Alexander University Erlangen-Nuremberg, Germany (2015 - 2019).
- **Post-doctoral Fellowship** from the Chair of Microbiology, Department of Biology, Friedrich-Alexander University Erlangen-Nuremberg, Germany (2013 - 2015).
- **DAAD (German Academic Exchange Service) sandwich fellowship** for pursuing part of PhD research at the Institute for Medical Microbiology, Otto-von-Guericke University, Magdeburg, Germany (2006 - 2008).
- **ICMR (Indian Council of Medical Research) Senior Research Fellowship** at Department of Biotechnology, University of Calicut, Kerala, INDIA. (2005 - 2006).
- **ICMR Junior Research Fellowship** at Department of Biotechnology, University of Calicut, Kerala, INDIA. (2003 - 2005).

### ***Area of Research/Interest***

- Innate Immunity
- Inflammation resolution
- Toll-like receptors and Nod-like receptors
- Cellular signal transduction
- Cytokine biology
- Infection biology
- Immuno-Genomics & Transcriptomics
- Biochemistry
- Immunology of Gastrointestinal bacteria (pathogens and microbiota)
- Immunology of other emerging bacterial pathogens
- Environmental/Natural compounds as immunomodulators/toxins

### ***Publication***

*Google scholar:* <https://scholar.google.com/citations?user=0iVgmF0AAAAJ&hl=en>

### **Research Article/Abstract**

1. Betsy Joseph, Sandeep Gopalakrishnan, Rana A Alamoudi, Ruaa A Alamoudi, **Suneesh K Pachathundikandi**, Rasha N Alotaibi, Sukumaran Anil (2022). Detection of invisible dental biofilm using light-induced autofluorescence in adult patients - a systematic review. *Photodiagnosis and Photodynamic Therapy* 2022 May 20:102916. doi:10.1016/j.pdpdt.2022.102916. **IF- 3.631 (2020)**

2. Nicole Tegtmeyer †, Matthias Neddermann †, Judith Lind †, **Suneesh Kumar Pachathundikandi**, Irshad Sharafutdinov, Andrés Julián Gutiérrez-Escobar, Mark Brönstrup, Werner Tegge, Minsun Hong, Manfred Rohde, Robin M. Delahay, Michael Vieth, Heinrich Sticht, Steffen Backert (2020). Toll-like receptor 5 activation by the CagY repeat domains of *Helicobacter pylori*. *Cell Reports* 32: 108159. **IF- 9.423 (2020)**
3. Nicole Tegtmeyer, Heinrich Sticht, Judith Lind, Matthias Neddermann, **Suneesh Kumar Pachathundikandi**, Andrés Julián Gutiérrez-Escobar, Steffen Backert (2020). The repeat regions of *Helicobacter pylori* VirB10-ortholog CagY can bind and activate toll-like receptor 5. *Helicobacter*. **25: e12745. IF- 5.753 (2020)**
4. **Suneesh Kumar Pachathundikandi\***, Nicole Blaser, Heiko Bruns, Steffen Backert (2020). *Helicobacter pylori* avoids the critical activation of NLRP3 inflammasome mediated production of oncogenic mature IL-1 $\beta$  in human cells. *Cancers* 12: 803. **IF- 6.639 (2020)**
5. **Suneesh Kumar Pachathundikandi †**, Nicole Tegtmeyer †, Isabelle Catherine Arnold, Judith Lind, Matthias Neddermann, Christina Falkeis-Veit, Sujay Chattopadhyay, Mark Bronstrup, Werner Tegge, Minsun Hong, Heinrich Sticht, Michael Vieth, Anne Mueller, Steffen Backert (2019). T4SS-dependent TLR5 activation by *Helicobacter pylori* infection. *Nature Communications* 10: 5717. **IF- 14.919 (2020)**
6. **Suneesh Kumar Pachathundikandi**, Andres Julian Gutiérrez-Escobar and Nicole Tegtmeyer (2019). Tailor-made detection of individual phosphorylated and non-phosphorylated EPIYA-motifs of *Helicobacter pylori* oncoprotein CagA. *Cancers* 11: 1163. **IF- 6.639 (2020)**
7. Steffen Backert, **Suneesh Kumar Pachathundikandi**, Matthias Neddermann, Judith Lind, Carmen Asche, Nicole Tegtmeyer (2018). Interaction of *Helicobacter pylori* with Toll-Like receptors: role in infection control and resolution of inflammation. *Helicobacter*. **23(Suppl. 1): e12525. IF- 5.753 (2020)**
8. **Suneesh Kumar Pachathundikandi** and Steffen Backert (2018). Heptose 1,7-Bisphosphate Directed TIFA Oligomerization: A Novel PAMP-Recognizing Signaling Platform in the Control of Bacterial Infections. *Gastroenterology*. **154(4):778-783. IF- 22.682 (2020)**
9. **Suneesh Kumar Pachathundikandi** and Steffen Backert (2018). *Helicobacter pylori* controls NLRP3 expression by regulating hsa-miR-223-3p and IL-10 in cultured and primary human immune cells. *Innate Immunity* **24(1):11-23. IF- 2.680 (2020)**
10. **Suneesh Kumar Pachathundikandi** and Steffen Backert (2016). Differential Expression of Interleukin 1 $\beta$  During *Helicobacter pylori* Infection of Toll-like Receptor 2 (TLR2)– and TLR10-Expressing HEK293 Cell Lines. *Journal of Infectious Diseases* **214(1):166-7. IF- 5.226 (2020)**
11. **Suneesh Kumar Pachathundikandi\***, Judith Lind, Emad M. El-Omar, Nicole Tegtmeyer and Steffen Backert (2015). Interplay of the Gastric Pathogen *Helicobacter pylori* with Toll-Like Receptors. *Biomed Research International*: **192420. IF- 3.411 (2020)**
12. **Suneesh Kumar Pachathundikandi**, Nicole Tegtmeyer and Steffen Backert (2013). Signal transduction of *Helicobacter pylori* during interaction with host cell protein receptors of epithelial and immune cells. *Gut Microbes* **4(6):454-74. IF- 10.245 (2020)**
13. **Suneesh Kumar Pachathundikandi**, Sabine Brandt, Joseph Madassery and Steffen Backert (2011). Induction of TLR-2 and TLR-5 expression by *Helicobacter pylori* Switches CagPAI-Dependent Signalling Leading to Secretion of IL-8 and TNF $\alpha$ . *PLoS ONE* **6(5): e19614. IF- 3.240 (2020)**
14. **Suneesh Kumar Pachathundikandi\***, Anish Kumar, Prakash Zacharias and Joseph Madassery (2011). Analysis of CagA, VacA and IceA genotypes of colonized

- Helicobacter pylori* and Interleukin-1 receptor antagonist (*IL-1RN*) gene polymorphism among dyspepsia patients. *Journal of Medicine and Medical Sciences* 2(9): 1060 - 1066.
15. **Suneesh Kumar Pachathundikandi\*** and Thomas Varghese Earaly (2006). Blood zinc protoporphyrin, serum total protein, and total cholesterol levels in automobile workshop workers in relation to lead toxicity:our experience. *Indian Journal of Clinical Biochemistry* 21(2): 114 – 117.
  16. Martin K P, **Suneesh Kumar Pachathundikandi**, Zhang C L, Slater A and Madassery Joseph (2006). RAPD analysis of a variant of banana (*Musa* sp.) Cv. Grande naine and its propagation via shoot tip culture. *In Vitro Cellular and Development Biology – Plant* 42(2) 188 – 192. IF- 2.252 (2020)
  17. Manoj Emanuel Hembrom, Martin K P, **Suneesh Kumar Pachathundikandi** and Madassery Joseph (2006). Rapid in vitro production of true-to-type plants of *Pogostemon heyneanus* through dedifferentiated axillary buds. *In Vitro Cellular and Development Biology – Plant* 42(3) 283 – 286. IF- 2.252 (2020)

### **Book chapter**

18. **Suneesh Kumar Pachathundikandi**, Nicole Blaser\_and Steffen Backert\_(2019) Mechanisms of Inflammasome Signaling, microRNA Induction and Resolution of Inflammation by *Helicobacter pylori*. In: Backert S. (eds) Molecular Mechanisms of Inflammation: Induction, Resolution and Escape by *Helicobacter pylori*. Current Topics in Microbiology and Immunology, vol 421. Springer, Cham.
19. Nicole Blaser, Steffen Backert, **Suneesh Kumar Pachathundikandi\*** (2019). Immune Cell Signaling by *Helicobacter pylori*: Impact on Gastric Pathology. In: Kamiya S., Backert S. (eds) *Helicobacter pylori* in Human Diseases. Advances in Experimental Medicine and Biology, vol 1149. Springer, Cham.
20. **Suneesh Kumar Pachathundikandi**, Anne Müller, Steffen Backert (2016). Inflammasome Activation by *Helicobacter pylori* and Its Implications for Persistence and Immunity. In: Backert S. (eds) Inflammasome Signaling and Bacterial Infections. Current Topics in Microbiology and Immunology, vol 397. Springer, Cham.

### **Workshop/Conference paper**

21. Nicole Tegtmeyer, Heinrich Sticht, Judith Lind, Matthias Neddermann, **Suneesh Kumar Pachathundikandi**, Andrés Julián Gutiérrez-Escobar, Steffen Backert (2020). The repeat regions of *Helicobacter pylori* VirB10-ortholog CagY can bind and activate toll-like receptor 5. **XXXIII<sup>rd</sup> International Workshop on Helicobacter & Microbiota in Inflammation & Cancer, Virtual Meeting.** (Abstract published in *Helicobacter* journal)
22. Steffen Backert, **Suneesh Kumar Pachathundikandi**, Matthias Neddermann, Judith Lind, Carmen Asche, Nicole Tegtmeyer (2018). Interaction of *Helicobacter pylori* with Toll-Like receptors: role in infection control and resolution of inflammation. **EHMSG – XXXI<sup>st</sup> International Workshop on Helicobacter & Microbiota in Inflammation & Cancer, Lithuania.** (Abstract published in *Helicobacter* journal)
23. **Suneesh Kumar Pachathundikandi and Steffen Backert (2014).** Comparison of cytokine gene expression profiles in two *Helicobacter pylori* infected cell lines from the perspective of toll-like receptors. **Symposium "Infection and Immunity", FG Infektionsimmunologie der DGHM, Burg Rothenfels, Germany.**

24. **Suneesh Kumar Pachathundikandi**, Joseph Madassery and Steffen Backert (2012). Inflammasome forming Nod-like Receptors expression and IL-1beta secretion from THP-1 cells infected with wild type and isogenic  $\Delta cagA$  mutant *Helicobacter pylori*. **NANO-BIO-2012. Amrita Center for Nano-sciences and Molecular Medicine, AIMS, Kochi, Kerala, India.**
25. **Suneesh Kumar Pachathundikandi**, Wolfgang Koenig and Steffen Backert (2007). Complex Toll-Like Receptor expression patterns in Immune cells during infection with *Helicobacter pylori*. **DGHM *Helicobacter pylori* –workshop, Herrsching am Ammersee, Germany.**

\* **Corresponding author**

† **Equal authorship**

### **Conferences attended**

1. DFG CRC-1181 Kick off meeting, Kloster Banz, Bad Staffelstein, Germany. December 14 – 15<sup>th</sup>, 2015.
2. Symposium "Infection and Immunity", FG Infectionsimmunologie der DGHM, Burg Rothenfels, Germany. March 12-14<sup>th</sup>, 2014.
3. **NANO-BIO-2012. Amrita Center for Nano-sciences and Molecular Medicine, AIMS, Kochi, Kerala, India. February 21-23<sup>rd</sup>, 2012.**
4. Colloquium on R&D-Industry interface for biotech development in Kerala, Kerala Biotechnology Board, Kochi, India. January 12<sup>th</sup>, 2011.
5. DGHM *Helicobacter pylori* –workshop, Herrsching am Ammersee, Germany. October 26-28<sup>th</sup>, 2007.
6. Indo-Australian conference on biotechnology in infectious diseases. Australian Education International. Kasturba Medical College, MAHE, Manipal, India. March 1-3<sup>rd</sup>, 2005.
7. National conference on molecular Diagnostics. Department of Biochemistry, University of Kerala, Thiruvananthapuram, India. June 27-29<sup>th</sup>, 1998.
8. XXIII Annual conference of Association of Clinical Biochemists of India. School of Medical Education, Mahatma Gandhi University, Kottayam, India. December 27-30<sup>th</sup>, 1996.
9. Workshop on Quality Control in Clinical Chemistry, XXIII Annual conference of Association of Clinical Biochemists of India. School of Medical Education, Mahatma Gandhi University, Kottayam, India. December 27-30<sup>th</sup>, 1996.

### ***Project Guidance***

**PhD – 1 (Co-supervision – FAU Germany)**

**Masters – 2 (FAU Germany)**

**Bachelors – 1 (FAU Germany)**

### ***Teaching Experience***

- **2013 – 2014**

Conducted lectures on **Innate immune receptors and signalling, Bacterial immune**

**evasion and micro-RNA biogenesis in health and diseases** for Master students of the Department of Biology, Friedrich-Alexander University Erlangen-Nuremberg.

- Conducted a one month practical- and theory-based **Master Module on Molecular Pathogenesis** (Joint convenor).
- **2010 - 2012**  
Conducted lectures on **Molecular Biology, Immunology, Molecular Diagnostics, Transgenics, Biosafety and Intellectual property rights** for M.Sc (Molecular Biology & Genetic Engineering) course (affiliated to Mahatma Gandhi University) of SIBB R&D, South Kalamassery, Kochi, Kerala, India

### *Clinical Experience*

- Visiting observer at Department of Biochemistry and Biophysics, St. John's Medical college, Bangalore, August – September, 1998.
- Biochemist trainee at Jeeva Specialty Laboratory, Thrissur, Kerala, October – November, 1998.
- Clinical Biochemist at PVS hospital, Kozhikode, Kerala (1998 – 1999).

### *Other Scientific Activities*

#### *Reviewer of Journals*

- Cancer Letters (IF: 8.679)
- International Immunopharmacology (IF: 4.932)
- Antibiotics (IF: 4.639)
- Microorganisms (IF: 4.128)
- Current Issues in Molecular Biology (IF: 2.081)
- Gastrointestinal Disorders

### *Countries Visited*

- Germany
- France
- Netherlands
- Austria
- Switzerland
- Italy
- Czechia
- Malta
- Luxemburg
- Qatar