

## CURRICULUM VITAE

### Sudhanshu Shekhar

Scientist (Výzkumný pracovník)  
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### Positions - current and previous

Year	Job title – Employer - Country
2024-Present	Scientist – Laboratory of Gnotobiology, Institute of Microbiology of the Czech Academy of Sciences – Czech Republic
2019-2022	Senior Researcher (equivalent to Associate Professor) – Institute of Oral Biology, University of Oslo – Norway
2015-2018	Postdoctoral Researcher - Institute of Oral Biology, University of Oslo – Norway
2008-2009	Veterinarian – Plan International (a charity organization) – India

### Education

Year	Faculty/department - University/institution - Country
2010-2015	PhD in Immunology – Department of Medical Microbiology – University of Manitoba – Canada
2006-2007	MSc in Integrated Immunology – Medical Sciences Division – University of Oxford – England
1999-2005	BVSc & AH in Veterinary Medicine – Rajendra Agricultural University – India

### Career breaks

Year	Reason
2022-2023	Took a break to cope with and manage the loss of a family member and the circumstances surrounding it.

### Project management experience

Year	Project owner - Project - Role - Funder
2019-2022	Fernanda Cristina Petersen – Born in the twilight of antibiotics: Fighting antimicrobial resistance in preterm infants – Researcher and Supervisor for the immunological and animal research sections of the project – Olav Thon Foundation, Norway
2018-2018	Sudhanshu Shekhar – Exploring mouse IgG2a and IgG1 antibody responses to <i>Streptococcus mitis</i> and <i>Streptococcus pneumoniae</i> – Project In-charge (PI) – UiO:Life Science, Norway

### Other relevant professional experiences

Year	Description - Role
2024-2024	Membership – <b>1.</b> Czech Immunological Society (CIS), <b>2.</b> Norwegian Society for Immunology (NSI), <b>3.</b> European Federation of Immunological Societies (EFIS), <b>4.</b> Indian Veterinary Association (IVA)
2015-2023	Ad hoc reviewer – reviewed manuscripts for several scientific journals, including PLOS Pathogens, STAR Protocols (Cell Press), Immunobiology, Frontiers in Immunology, and Scandinavian Journal of Immunology.
2015-2022	Major Research Collaborations – <b>1.</b> Centers of Disease Control and Prevention (CDC), Atlanta, USA, <b>2.</b> RCN INTPART: Enhancing world-class research and education in biofilm and antibiotic resistance by strengthening cooperation between Norway-Brazil-USA <b>3.</b> RCN INDNOR: Implications of antibiotic use to the preterm infant respiratory microbiome and resistome development [Oslo University Hospital, Norway, Norwegian Public Health Institute, Norway, and LHMC, Delhi, India] <b>4.</b> RCN FRIMEDBIO: Protective Immunity to

	<i>Streptococcus pneumoniae</i> [Oslo University Hospital, Norway, University College London, UK, Liverpool School of Tropical Medicine, UK, and JCVI, USA], and 5. Norwegian PSC research center, Rikshospitalet, Norway.
2017-2022	Instructor of Advanced Immunology courses - taught at the Faculty of Dentistry, University of Oslo, Norway.
2017-2020	Ad hoc/Guest Editor – edited articles for Frontiers in Immunology, Frontiers in Microbiology, and Mediators of Inflammation.
2018-2018	Member - Animal technician hiring committee, Institute of Oral Biology, University of Oslo
2017-2018	Chairperson – Annual Research Day Symposium for two successive years at the Faculty of Dentistry, University of Oslo, Norway.

### Supervision of students

(Total number of students)

Master's students	Ph.D. students	University/institution - Country
1	1	Institute of Oral Biology, University of Oslo, Norway

**Publications** [31 (Articles) + 2 (Book/chapter) = 33]:

### Research/Review Articles

1. Navdeep Kaur Brar, Achal Dhariwal, **Sudhanshu Shekhar**, Roger Junges, Anders P. Håkansson, and Fernanda Cristina Petersen. 2024. HAMLET, a human milk protein-lipid complex, modulates amoxicillin induced changes in an ex vivo biofilm model of the oral microbiome. **Frontiers in Microbiology**. doi: 10.3389/fmicb.2024.1406190. (Impact Factor – 4.0)
2. Ying Peng, Sai Qiao, Hong Wang, **Sudhanshu Shekhar**, Shuhe Wang, Jie Yang, Yijun Fan, and Xi Yang. 2024. Enhancement of macrophage immunity against chlamydial infection by natural killer T cells. **Cells**. 13(2):133. doi: 10.3390/cells13020133. (Impact Factor – 5.1)
3. **Sudhanshu Shekhar**, Navdeep Kaur Brar, Anders P Håkansson, and Fernanda Cristina Petersen. 2023. Treatment of mouse infants with amoxicillin, but not the human milk-derived antimicrobial HAMLET, impairs lung Th17 responses. **Antibiotics**. doi:10.3390/antibiotics12020423. (Impact Factor – 4.3)
4. **Sudhanshu Shekhar\***, Navdeep Kaur Brar, and Fernanda Cristina Petersen\*. 2023. Suppressive effect of therapeutic antibiotic regimen on antipneumococcal Th1/Th17 responses in neonatal mice. **Pediatric Research**. doi: 10.1038/s41390-022-02115-7. (Impact Factor – 3.1). \*Corresponding author
5. Katrine Lekang, **Sudhanshu Shekhar**, Dag Berild, Fernanda Cristina Petersen, and Hanne C. Winther-Larsen. 2022. Effects of different amoxicillin treatment durations on microbiome diversity and composition in the gut. **PLOS ONE**. doi: 10.1371/journal.pone.0275737. (Impact Factor – 2.9)
6. Rony Thomas, Shuhe Wang, **Sudhanshu Shekhar**, Ying Peng, Sai Qiao, Chunyan Zhang, Lianyu Shan, Hesam Movassagh, Abdelilah S. Gounni, Jie Yang, and Xi Yang. 2021. Semaphorin 3E protects against chlamydial infection by modulating dendritic cell functions. **Journal of Immunology**. doi: 10.4049/jimmunol.2001013. (Impact factor- 3.6).
7. **Sudhanshu Shekhar\***, Heidi A Åmdal, and Fernanda Cristina Petersen\*. 2021. Vaccination with the commensal *Streptococcus mitis* expressing pneumococcal serotype 5 capsule elicits IgG/IgA and Th17 responses against *Streptococcus pneumoniae*. **Frontiers in Immunology**. doi: 10.3389/fimmu.2021.676488. (Impact Factor – 5.7). \*Corresponding author
8. **Sudhanshu Shekhar\*** and Fernanda Cristina Petersen\*. 2020. The dark side of antibiotics: adverse effects on the infant immune defense against infection. **Frontiers in Pediatrics**. doi:10.3389/fped.2020.544460. (Impact factor - 2.1). \*Corresponding author
9. **Sudhanshu Shekhar** and Xi Yang. 2020. Pulmonary CD103+ dendritic cells: key regulators of immunity against infection. **Cellular & Molecular Immunology**. 17(6):670-671. doi:10.1038/s41423-020-0397-8 (Impact Factor - 21.8)
10. Lei Zhao, Hong Wang, Xiaoling Gao, Rony Thomas, Hong Bai, **Sudhanshu Shekhar**, Shuhe Wang, Jie Yang, Weiming Zhao and Xi Yang. 2020. NK cells modulate T cell responses via interaction with dendritic cells in *Chlamydomphila pneumoniae* infection. **Cellular Immunology**. 353:104132. doi:10.1016/j.cellimm.2020.104132 (Impact factor – 3.7)
11. **Sudhanshu Shekhar\***, Fernanda Cristina Petersen, and Xi Yang. 2019. Understanding and exploiting

- host-commensal interactions to combat pathogens. **Frontiers in Immunology**. 10:2645. Published 2019 Nov 12. doi:10.3389/fimmu.2019.02645 (Impact Factor – 5.7). \*Corresponding author
12. **Sudhanshu Shekhar\***, Rabia Khan, Karl Schenck, and Fernanda Cristina Petersen\*. 2019. Intranasal immunization with the commensal *Streptococcus mitis* confers protective immunity against pneumococcal lung infection. **Applied and Environmental Microbiology**. 85(6):e02235-18. Published 2019 Mar 6. doi:10.1128/AEM.02235-18 (Impact Factor – 3.9). \*Corresponding author
  13. **Sudhanshu Shekhar\***, Rabia Khan, Ata Ul Razzaq Khan, and Fernanda Cristina Petersen. 2019. Mouse IgG2a and IgG1 antibodies specific for *Streptococcus mitis* show cross-reactivity with *Streptococcus pneumoniae*. **Journal of Immunology Research**. 2019:7906724. Published 2019 Sep 10. doi:10.1155/2019/7906724 (Impact Factor – 4.1). \*Corresponding author
  14. Rabia Khan\*, Fernanda Cristina Petersen, and **Sudhanshu Shekhar\***. 2019. Commensal bacteria: an emerging player in defense against respiratory pathogens. **Frontiers in Immunology**. 10:1203. Published 2019 May 31. doi:10.3389/fimmu.2019.01203 (Impact Factor - 5.7) \*Corresponding author
  15. **Sudhanshu Shekhar**, Rabia Khan, Daniela Ferreira, Elena Mitsi, Esther German, Gro H Rørvik, Dag Berild, Karl Schenck, Keehwan Kwon, and Fernanda Petersen. 2018. Antibodies reactive to commensal *Streptococcus mitis* show cross-reactivity with virulent *Streptococcus pneumoniae* serotypes. **Frontiers in Immunology**. 9:747. Published 2018 Apr 16. doi:10.3389/fimmu.2018.00747 (Impact Factor – 5.7)
  16. **Sudhanshu Shekhar**, Ying Peng, Shuhe Wang, and Xi Yang. 2018. CD103+ lung dendritic cells (LDCs) induce stronger Th1/Th17 immunity to a bacterial lung infection than CD11bhi LDCs. **Cellular & Molecular Immunology**. 15(4):377-387. doi:10.1038/cmi.2016.68 (Impact Factor – 21.8)
  17. **Sudhanshu Shekhar**, Karl Schenck, and Fernanda Cristina Petersen. 2018. Exploring host-commensal interactions in the respiratory tract. **Frontiers in Immunology**. 8:1971. Published 2018 Jan 17. doi:10.3389/fimmu.2017.01971 (Impact Factor – 5.7)
  18. Roger Junges, Gabriela Salvadori, **Sudhanshu Shekhar**, Heidi Åmdal, Jimstan Periselneris, Tsute Chen, Jeremy Brown, and Fernanda Cristina Petersen. 2017. A quorum-sensing system that regulates *Streptococcus pneumoniae* biofilm formation and surface polysaccharide production. **mSphere**. 2(5):e00324-17. Published 2017 Sep 13. doi:10.1128/mSphere.00324-17 (Impact Factor- 4.8)
  19. Qingdong Guan, Xiaoling Gao, Junhui Wang, Yu Sun, and **Sudhanshu Shekhar**. 2017. Cytokines in autoimmune disease. **Mediators of Inflammation**. 2017:5089815. doi:10.1155/2017/5089815 (Impact Factor – 4.4)
  20. **Sudhanshu Shekhar**, Antony George Joyee, and Xi Yang. 2015. Dynamics of NKT cell responses to chlamydial infections. **Frontiers in Immunology**. 6:233. Published 2015 May 15. doi:10.3389/fimmu.2015.00233 (Impact Factor – 5.7)
  21. **Sudhanshu Shekhar**, Ying Peng, Gao Xiaoling, Antony George Joyee, Wang Shuhe, Hong Bai, Lei Zhao, Jie Yang and Xi Yang. 2015. NK cells modulate the lung dendritic cell-mediated Th1/Th17 immunity during intracellular bacterial infection. **European Journal of Immunology**. 45(10):2810-2820. doi:10.1002/eji.201445390 (Impact Factor – 4.5)
  22. **Sudhanshu Shekhar\*** and Xi Yang. 2015. Natural killer cells in host defense against veterinary pathogens. **Veterinary Immunology and Immunopathology**. 168(1-2):30-34. doi:10.1016/j.vetimm.2015.10.001 (Impact Factor – 1.4) \*Corresponding author
  23. **Sudhanshu Shekhar**, Antony George Joyee, Xiaoling Gao, Ying Peng, Shuhe Wang, Jie Yang, and Xi Yang. 2015. Invariant NKT cells promote T cell immunity through modulating the function of lung dendritic cells during *Chlamydia pneumoniae* infection. **Journal of Innate Immunity**. 7(3):260-274. doi:10.1159/000368779 (Impact Factor – 4.7)
  24. Kalesh Danappa Jayappa, Zhujun Ao, Wang Xiaoxia, Andrew J Moulard, **Sudhanshu Shekhar**, Xi Yang, and Xiaojian Yao. 2015. Human immunodeficiency virus type 1 employs the cellular protein dynein light chain 1 for reverse transcription through integrase protein interaction. **Journal of Virology**. 89(7):3497-3511. doi:10.1128/JVI.03347-14 (Impact Factor – 4.0)
  25. Ying Peng, Xiaoling Gao, Jie Yang, **Sudhanshu Shekhar**, Wang Shuhe, Yijun Fan, Weiming Zhao, and Xi Yang. 2015. Chlamydial lung infection induces transient IL-9 production, which is redundant for host defense against primary infection. **PLOS ONE**. 10(2):e0115195. Published 2015 Feb 3. doi:10.1371/journal.pone.0115195 (Impact Factor – 2.9)

26. **Sudhanshu Shekhar**, Antony George Joyee, and Xi Yang. 2014. Invariant natural killer T cells: boon or bane in immunity to intracellular bacterial infections? **Journal of Innate Immunity**. 6(5):575-584. doi:10.1159/000361048 (Impact Factor – 4.7)
27. Ying Peng, Xiaoling Gao, Jie Yang, **Sudhanshu Shekhar**, Shuhe Wang, Yijun Fan, Weiming Zhao, and Xi Yang. 2014. IL-22 promotes Th1/Th17 immunity in chlamydial lung infection. **Molecular Medicine**. 20(1):109-119. Published 2014 Mar 20. doi:10.2119/molmed.2013.00115 (Impact Factor – 4.8)
28. Ying Peng, Lei Zhao, **Sudhanshu Shekhar**, Hong Wang, Lu Liu, Qiang Chen, Xiaoling Gao, Xi Yang, and Weiming Zhao. 2012. The glycolipid exoantigen derived from *Chlamydia muridarum* activates invariant natural killer T cells. **Cellular & Molecular Immunology**. 9(4):361-366. doi:10.1038/cmi.2012.19 (Impact Factor – 21.8)
29. **Sudhanshu Shekhar** and Xi Yang. 2012. The darker side of follicular helper T cells: from autoimmunity to immunodeficiency. **Cellular & Molecular Immunology**. 9(5):380-385. doi:10.1038/cmi.2012.26 (Impact Factor – 21.8). Journal Header Image
30. **Sudhanshu Shekhar\***, Simon Milling, and Xi Yang. 2012. Migration of  $\gamma\delta$  T cells in steady-state conditions. **Veterinary Immunology and Immunopathology**. 147(1-2):1-5. doi:10.1016/j.vetimm.2012.03.016 (Impact Factor – 1.4) \*Corresponding author
31. **Sudhanshu Shekhar\***, Simon Milling, Chris Jenkins, and Gordon MacPherson. 2012. Identification and phenotypic characterization of  $\gamma\delta$  T cells in rat lymph. **Research in Veterinary Science**. 93 (1):168-171. doi:10.1016/j.rvsc.2011.07.014 (Impact Factor – 2.2) \*Corresponding author

#### Book/Chapter

1. Pankaj Kumar, B. S. Chandel, R. Saravanan, and **Sudhanshu Shekhar**. 2019. Integrated Immunology. Book. **AGRI BIOVET PRESS**. ISBN: 978-93-84502-50-8. India
2. Juan Carlos Rodriguez-Lecompte, **Sudhanshu Shekhar**, and Tomy Joseph. 2010. Zoonotic implications of avian and swine influenza (eds. Hendrick, S. & Krause, D.O.) Book chapter- 9 in Zoonotic pathogens in the food chain. **CAB International**, Oxfordshire, UK, 182-196.

#### Speaker at Conferences/Seminars (Selected)

1. Oral Commensal bacteria as a live vaccine against pneumococcal infections. 2024. 3rd Polish-Czech Probiotic Conference, Karczowiska, Poland (to be held on September 13, 2024)
2. Oral commensals as a live vaccine and the impact of therapeutic antibiotics on neonatal immunity against pneumococcal infection. 2024. Invited Lecture at the Czech Immunological Society (CIS), Prague, Czech Republic (to be held on September 19, 2024)
3. Capitalizing on host-microbiota interactions: Oral commensals as live vaccines and the impact of novel antimicrobials on infants. 2024. Lecture Series at the Laboratory of Gnotobiology, Institute of Microbiology of the Czech Academy of Sciences, Nový Hrádek, Czech Republic
4. Neonatal exposure to therapeutic antibiotic regimens suppresses peripheral and mucosal T cell responses. 2020. Infection Biology and Antimicrobials (IBA) Annual Meeting, Norway
5. Impact of antibiotics on the infant microbiota and immunity. 2020. Department of Comparative Medicine, Rikshospitalet, Oslo, Norway
6. Mobilizing oral commensals to combat *Streptococcus pneumoniae* infection. 2019. RESISPART Symposium, Piracicaba, Brazil
7. Mobilizing beneficial microbes to provide protection against pneumococcal infections. 2018. Norwegian PSC Center, Rikshospitalet, Oslo, Norway
8. Harnessing commensal bacteria to combat pneumococcal infections. 2018. Department of Infectious Diseases, Ullevål Hospital, Oslo, Norway
9. *Streptococcus mitis*-specific antibodies show cross-reactivity with a range of virulent *Streptococcus pneumoniae* serotypes. 2017. Department of Infectious Diseases, Ullevål Hospital, Oslo, Norway
10. *Streptococcus mitis*-specific antibodies show cross-reactivity with a range of virulent *Streptococcus pneumoniae* serotypes. 2017. Norwegian PSC Research Center, Rikshospitalet, Oslo, Norway
11. *Streptococcus mitis*-specific antibodies show cross-reactivity with a range of virulent *Streptococcus pneumoniae* serotypes. 2017. 13th European Meeting on the Molecular Biology of the Pneumococcus (EUROPNEUMO 2017), Karolinska Institute, Sweden

12. Invariant NKT cells promote T cell immunity through modulating the function of lung dendritic cells during Chlamydia pneumoniae infection. 2012. Prairie Infectious Immunology Conference, Saskatchewan, Canada

### Fellowships & Awards

- **Travel Award:** €400, 12th World Immune Regulation Meeting, Davos, Switzerland (2018)
- **Allan Ronald Fellowship:** \$10,000, University of Manitoba, Manitoba, Canada (2014)
- **Manitoba Health Research Council Fellowship:** \$35,700, MHRC, Canada (2012)
- **Dean's Award:** \$500, Canadian Student Health Research Forum, Manitoba, Canada (2012)
- **Allan Ronald Fellowship:** \$10,000, University of Manitoba, Manitoba, Canada (2011)
- **Bursary Award:** £11,000, University of Oxford, Oxford, England (2006)

### Grant Applications

Grant	Funding Agency	Role	Year
CAREER GRANT	Health South-East RHF	Project leader	2017
Summer Project	UiO:Life Science	Project leader	2018
Sixth JPI AMR Joint Call	Joint Programming Initiative on Antimicrobial Resistance	Project coordinator	2018
GLOBVAC	Norwegian Research Council	Project coordinator	2018
FRIMEDBIO	Norwegian Research Council	Project coordinator	2018
FRIPRO	Norwegian Research Council	Project partner	2019
BEDREHELSE	Norwegian Research Council	Project partner	2019

### Professional Associations

- Czech Immunological Society (CIS)
- Norwegian Society for Immunology (NSI)
- European Federation of Immunological Societies (EFIS),
- Indian Veterinary Association (IVA)

### Languages

- Hindi - native
- English - fully proficient
- Norwegian – basic

### References

1. **Dr Martin Schwarzer**  
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2. **Prof Fernanda Cristina Petersen**  
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<https://www.odont.uio.no/iob/english/people/aca/cpaiva/index.html>
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