

Xi Chen

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EDUCATION

2023	Karolinska Institutet, Stockholm, Sweden	Ph.D. Medical Science Advisor: Soham Gupta
2018	Sun Yat-sen University, Guangzhou, China	M.Sc. Immunology Advisor: Kai Deng
2013	Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China	B.Sc. in Pharmacy

RESEARCH EXPERIENCE

2023- Present	<p><u>Post-doctoral researcher</u> <i>Unit of Biochemical Toxicology, Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden.</i> Advisor: Ulla Stenius New type of indirect damage to DNA may be crucial to how quartz causes cancer</p>
2018-2023	<p><u>Ph.D Candidate</u> <i>Division of Clinical Microbiology, Department of Laboratory Medicine, Karolinska Institutet, Stockholm, Sweden.</i> Advisors: Soham Gupta, Ujjwal Neogi, Akos Vegari Ph.D. Thesis: Interfering with interferons: Interplay between SARS-CoV-2 and interferon response (March 21st, 2023). Thesis Opponent: Francis Impens(Ghent University), Committee member: Harold Marcotte(Karolinska Institutet), Johan Lennerstrand(Uppsala University), Koustav Ganguly(Karolinska Institutet).</p> <ul style="list-style-type: none"> • Extensive training in a wide array of lab techniques (Westernblot, Quantitative real-time PCR, confocal microscopy, co-immunoprecipitation, flow cytometry) • Extensive BSL-3 work: cell culture, viral infection, virus titration assay, co-culture, and processing of infectious patient material • IFNs detection assays: Optimization of FACS-based LEGENDplex assay and ProcartaPlex™ Human assay with collaborators • Led collaborators through the project plan, build and delivery of the results. • Presented at lab meetings, division seminars, retreats at Karolinska Institutet, and international conferences • Writing scientific articles (two co-first authored articles and two manuscripts), conference abstracts and lab protocols • Co-supervised the master thesis: Sefanit Rezene (Lund University)

- 2015-2018** Master Trainee
The institute of Human Virology, Zhongshan medical college, Sun Yat-sen University, Guangzhou, China.
Project 1: The influence of HIV-1 specific cytotoxic CD8+ T cell response on the establishment and maintenance of HIV-1 reservoir.
 - Gene editing of primary CD4+ T cell using lentiviral vector
 - Cytotoxic CD8+ T cells function analysis
 - Flow cytometry analysis**Project 2:** Identification of latency reversing reagents by using a Bcl-2 transduced primary latency model.
 - Evaluation of different latency cell models and drug libraries
 - Optimization and establishment of the high-throughput workflow
 - Analysis and report of the data
- 2013-2014** Research assistant
The institute of clinical pharmacology, Xiangya medical college, Central South University, Changsha, China
- 2012-2013** Bachelor Thesis
Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China.
Thesis title: Preliminary study on the purification of two kinds of uniform molecular weight lentinan and its antitumor activity in vitro.
- 2011-2012** National College Students' Innovative Project
Tongji Medical College, Huazhong University of Science and Technology, Wuhan, China
Project title: Epigenetic modification changes of Tregs' key genes during canceration of colitis in mice.
 - Animal manipulation: establishment of colitis model mice, gastric administration of drugs, lymphoid tissue extraction.**Advisor:** Ming Xiang

TECHNIQUES

- Molecular biology: Plasmids design, molecular cloning.
- Cell culture: Cell lines and primary cells, processing of human samples, isolation, and culture of primary human immune cells, highly experienced in BSL-3 work.
- Cell culture manipulation: Stimulation, inhibition, transfection (JetPei and lipofectamine)
- Protein assay: Western blot, immunoprecipitation assay, pulldown assay, confocal microscopy, and flow cytometry.
- RNA assays: RNA extraction, RT-PCR, quantitative real-time PCR.
- Animal manipulation: establishment of colitis model mice, gastric administration of drugs, lymphoid tissue extraction.
- Interferons (IFNs) detection: Luminex Multiplex Assays, FACS based LEGENDplex assay.
- Bioinformatics analysis: Transcriptomics and Proteomics Data visualization.

GRANT

Co-investigator, ISG15 at the interface of innate immune response and metabolic pathways during respiratory viral infections, Swedish Research Council, 1 January 2022 – 31 December 2025, 600,000 SEK.

TEACHING EXPERIENCE

Co-supervised the master thesis: Sefanit Rezene (Lund University)

ORGANISATIONS

Jun 2022- Present The Swedish Society for Virology (Member)

HONORS&ACHIEVEMENTS

2019.7 Bursary in Proteomics Bioinformatics from EMBL-EBI (European Molecular Biology Laboratory's European Bioinformatics Institute)
2018 National Scholarship of China
2015-2018 Comprehensive Academic Scholarship of Sun Yat-sen University

ACADEMIC ACTIVITIES

2022/10 Poster presentation: Karolinska Institutet symposium: Collaboration in Science 2022
2022/7 EMBO/EMBL Symposium: Innate immunity in host-pathogen interactions (VP), Heidelberg, German
2022/5 Poster presentation, Karolinska Infection retreat, Stockholm, Sweden
2022/9 FEBS 2022 Advanced Course: Exploring the human Proteome with Antibodies, Transcriptomics and Mass Spectrometry
2021/11 Poster presentation, Karolinska Inflammation and Immunology (KiiM) annual retreat, Stockholm, Sweden
2019/9 Poster presentation, Nordic HIV and Hepatitis Conference 2019, Stockholm, Sweden
2019/7 EMBL Advanced course: Proteomics bioinformatics, London, UK

REFEREES

Soham Gupta Assistant Professor, Division of Clinical Microbiology, Department of Laboratory Medicine, Karolinska Institutet, Stockholm, Sweden.
Email: soham.gupta@ki.se
Research direction: To understand the mechanism of immune regulation during viral infection.

Kai Deng Professor, Institute of Human Virology, Zhongshan medical college, Sun Yat-sen University, Guangzhou, China.
Email: dengkai6@mail.sysu.edu.cn
Research direction: The mechanism by which viruses establish and maintain persistent infection in the host, and the response rules of the host immune system, and explore how to treat persistent viral infection through virus-specific immune strategies.

Ujjwal Neogi Associate Professor, Division of Clinical Microbiology, Department of Laboratory Medicine, Karolinska Institutet, Stockholm, Sweden.
Email: ujjwal.neogi@ki.se
Research direction: To identify molecular mechanism of viral adaptation in the host and novel biomarkers of natural immune control against RNA viruses.

PUBLICATION IN PEER-REVIEWED JOURNALS

1. **Xi Chen***, Elisa Saccon*, K. Sofia Appelberg, Flora Mikaeloff, Jimmy Esneider Rodriguez, Beatriz Sá Vinhas, Teresa Frisan, Ákos Végvári, Ali Mirazimi, Ujjwal Neogi, Soham Gupta. Type-I interferon signatures in SARS-CoV-2 infected Huh7 cells. **Cell Death Discov**, 2021. 7(1): p. 114. (*equal contribution)
2. Elisa Saccon*, **Xi Chen***, Flora Mikaeloff*, Jimmy Esneider Rodriguez, Laszlo Szekely, Beatriz Sá Vinhas, Shuba Krishnan, Siddappa N Byrareddy, Teresa Frisan, Ákos Végvári, Ali Mirazimi, Ujjwal Neogi, Soham Gupta. Cell-type-resolved quantitative proteomics map of interferon response against SARS-CoV-2. **iScience**, 2021. 24(5): p. 102420. (*equal contribution)
3. Flora Mikaeloff*, Sara Svensson Akusjärvi*, Axel Cederholm*, Ronaldo Lira-Junior, **Xi Chen**, Maike Sperk, Sefanit Rezene, Anoop T Ambikan, Hampus Nordqvist, Carl Johan Treutiger, Nils Landegren, Ujjwal Neogi and Soham Gupta. Expression of interferon stimulated genes and possible regulatory mechanisms in COVID-19. **European Respiratory Journal**, under review.
4. **Xi Chen**, Sefanit Rezene, Jácome Toste, Soham Gupta. Papain-like protease of SARS-CoV-2 inhibits type-I IFN by interfering with RIG-I signalosome activation. **Manuscript format**.
5. Wen Peng*, Zhongsi Hong*, **Xi Chen**, Hongbo Gao, Zhuanglin Dai, Jiacong Zhao, Wen Liu, Dan Li, Kai Deng. Thiostrepton Reactivates Latent HIV-1 through the p-TEFb and NF-kappaB Pathways Mediated by Heat Shock Response. **Antimicrob Agents Chemother**, 2020. 64(5).
6. Fei Yu*, Qijuan Li*, **Xi Chen**, Jun Liu, Linghua Li, Baojin Li, Bingfeng Liu, Junsong Zhang, Xu Zhang, Zhaoli Liu, Haihua Luo, Xiao-Ping Tang, Weiping Cai, Hui Zhang, Kai Deng. X4-Tropic Latent HIV-1 Is Enriched in Peripheral Follicular Helper T Cells and Is Correlated with Disease Progression. **J Virol**, 2020. 94(2).