

Hyderabad, India

Runa Kuleyrunakuley7@gmail.com

9515749706

<https://scholar.google.com/citations?user=s8XBtncAAAAJ&hl=en>

EDUCATION

Wageningen University and Research, The Netherlands**2011-2017****Ph.D. in Microbiology and Genomics**Thesis title: "Characterization of *Coxiella burnetii* outbreak strains"

Coxiella burnetii is an intracellular bacterium that causes zoonotic disease Q fever in domestic ruminants and humans. During 2007, the largest Q-fever outbreak occurred in The Netherlands. The goal of my thesis was to characterize the *C. burnetii* strains isolated from infected goat, cattle, sheep and human patients during the outbreak period. The objectives were to gain a better understanding of *C. burnetii* virulence, diversity, physiology and strain adaptation to various micro-environments using several molecular techniques, genomics, immunology approaches and mice animal model. The results in this thesis expand our knowledge regarding pathogen associated molecular and immunological factors involved in host infections.

University of Hyderabad, India**2009-2011****M.Sc in Animal Biotechnology**

Thesis title: "Effect of melatonin on age induced changes in relation to oxidative stress in peripheral clocks (Intestine)"

Osmania University, India**2006-2009****B.Sc. in Biotechnology**

WORK EXPERIENCE

Post-doctoral researcher**July 2020 – Dec 2021****University of Washington, Division of Rheumatology, Seattle, USA**

Supervisor: Dr. Christian Lood

My work explored the clinical utility of novel inflammatory neutrophil biomarkers in rheumatic disease like rheumatoid arthritis, systemic sclerosis, Systemic Lupus Erythematosus (SLE), vasculitis etc. as well in infectious diseases like COVID-19 where some patients show manifestations of rheumatic like disease symptoms.

Post-doctoral researcher**June 2017 – June 2020****University of Washington, Department of Immunology and Division of Rheumatology, Seattle, USA**

Supervisors: Prof. Edward A. Clark and Dr. Natalia Giltiay

My work focused on investigating the role of B cell activating factor (BAFF) in B cell responses in infections and in autoimmunity conditions. Using novel mice models, we identified BAFF sources and their regulation that promote protective B cell responses against bacterial (*Salmonella typhimurium*) and viral (*West Nile virus*) pathogens. Furthermore, contribution of BAFF in the pathogenesis of autoimmune diseases, particularly in SLE were also identified.

PUBLICATIONS

Kuley R, Stultz RD, Duvvuri B, Wang T, Fritzler MJ, Hesselstrand R, et al. N-Formyl Methionine Peptide-Mediated Neutrophil Activation in Systemic Sclerosis. *Front Immunol* 2022;12. <https://doi.org/10.3389/fimmu.2021.785275>

Kuley R*, Draves KE, Fuller DH, Giltaiy NV, Clark EA, Giordano D*. B cell activating factor (BAFF) from neutrophils and dendritic cells is required for protective B cell responses against *Salmonella typhimurium* infection. *PLoS ONE* (2021) 16:e0259158. doi:10.1371/journal.pone.0259158

*Corresponding authors

Giordano, D., **Kuley, R.**, Draves, K.E., Roe, K., Holder, U., Giltaiy, N.V., and Clark, E.A. (2020). BAFF Produced by Neutrophils and Dendritic Cells Is Regulated Differently and Has Distinct Roles in Antibody Responses and Protective Immunity against West Nile Virus. *J. Immunol.* 1950 204, 1508–1520.

Kuley R, Smith HE, Smits M, Jan Roest HI, Bossers A. Genome plasticity and polymorphisms in critical genes correlate with increased virulence of Dutch outbreak-related *Coxiella burnetii* strains. *Front. Microbiol.* 8:1526. doi: 10.3389/fmicb.2017.01526

Ammerdorffer A, **Kuley R**, Dinkla A, Joosten L, Toman R, Jan Roest HI, Sprong T, Rebel JM. *Coxiella burnetii* isolates originating from infected cattle induce a more pronounced pro-inflammatory cytokine response compared to isolates from infected goats and sheep. *Pathogens and Disease.* 2017 Apr 06 : 75 (4): ftx040.

Ammerdorffer A, **Kuley R**, Jan Roest HI. Physiopathology of *Coxiella burnetii* infection and host immunologic response. Book Title: The Principles and Practice of Q Fever: The One Health Paradigm. 2017. ISBN: 978-1-53610-868-2

Kuley R, Smith HE, Janse I, Harders FL, Baas F, Schijlen E, Nabuurs-Franssen MH, Smits MA, Roest HI, Bossers A. First complete genome sequence of the Dutch veterinary *Coxiella burnetii* strain NL3262, originating from the largest global Q fever outbreak, and draft genome sequence of its epidemiologically linked chronic human isolate NLhu3345937. *Genome Announcements.* 2016 Apr 21;4(2). pii: e00245-16. doi: 10.1128/genomeA.00245-16.

Kuley R, Bossers de-Vries, R, Smith HE, Smits M, Jan Roest HI, Bossers A. Major differential gene regulation in *Coxiella burnetii* between in vivo and in vitro cultivation models. *BMC Genomics.* 2015;16:953. DOI: 10.1186/s12864-015-2143-7.

Kuley R, Smith HE, Frangoulidis D, Smits MA, Jan Roest HI, Bossers A (2015) Cell-free propagation of *Coxiella burnetii* does not affect its relative virulence. *PLoS ONE* 10(3): e0121661. doi:10.1371/journal.pone.0121661.

MANUSCRIPTS UNDER REVISION

Michailidou D, Duvvuri B, **Kuley R**, Cuthbertson D, Grayson CP, Khalidi AN, Koenig LC, Langford AC, McAlear AC, Moreland WL, Pagnoux C, Seo P, Specks U, Sreih GA, Warrington K, Mustelin T, Monach AP, Merkel AP, Lood C. N-formyl methionine peptides promote neutrophil activation through formyl peptide receptor 1 in patients with anti-neutrophil cytoplasmic autoantibody-associated vasculitis and large vessel vasculitis (Arthritis res therapy).

MANUSCRIPTS UNDER PREPARATION

Giordano, D., **Kuley, R.**, Draves, K.E., Van, T., Clark, E.A., and Giltaiy, N.V. Cellular sources of B cell activating factor (BAFF) driving the development of SLE-like autoimmune disease.

Kuley R, Lood C. Neutrophil activation biomarkers in monitoring of treatment response to Baricitinib in rheumatoid arthritis.

SUPERVISION EXPERIENCE

- Supervision of Senior Fellow/Acting Instructor for their research projects (**July 2020 – Dec 2021**)
- Supervised one University of Washington graduate student during their internship (**Sep 2021 – Dec 2021**)

SKILLS

- Self-motivated, problem solver, strong attention to details, organized, works well in groups, highly collaborative, excellent communication skills (clear, effective writer, and presenter)
- Strong understanding of immune system function and dysregulation
- Experience working with mouse B cells, T cells and myeloid cells including dendritic cells (DCs), neutrophils and monocyte/macrophages
- Experience with isolation of human immune cells (neutrophils and B cells) and performing functional assays
- Proficient in multicolor flow cytometry, cell sorting and FlowJo software for data analysis
- Experience in standard molecular and cellular biology techniques (mammalian cell culture, ELISA, PCR, qPCR, western blot)
- Experience with gene expression platforms, Next Generation Sequencing (NGS) platforms and data analysis
- General biostatistics skills, SPSS, GraphPad Prism and familiar with R
- Experience working with BSL-2+, BSL-3 pathogens and handling of mice in BSL-2, BSL-2+ and BSL-3 animal facilities

SELECTED PRESENTATIONS

- American college of Rheumatology (ACR) Convergence, Virtual meeting (Nov, 2021). Poster
- Keystone symposia; B cell renaissance: Epigenetics, regulation and immunotherapy, Banff, Canada (Mar, 2020). Poster
- University of Washington, Department of Immunology retreat, Seattle, USA (Sep, 2018). Poster
- Microbial pathogenesis and host response, New York, USA (Sep, 2015). Poster
- American Society of Rickettsiology, Lake Tahoe, USA (June, 2015). Oral (via video conference)
- SFAM/MVNA Summer conference, Brighton, UK (June, 2014). Oral and Poster
- Agilent plant and animal symposium, The Netherlands (Feb, 2014). Oral
- Med-Vet-Net Association International conference, Denmark (2013). Poster
- National Q Fever meeting, The Netherlands, (2013). Oral
- International Q Fever Symposium, The Netherlands, (2012). Oral

FELLOWSHIPS AND AWARDS

- Awarded travel grant for the best oral presentation from NVZ (Nederlandse Zoötechnische Vereniging) during “WIAS (graduate school) science day” (2015)
- Received first prize in poster presentation at “SFAM/MVNA Summer conference”, Brighton, UK (2014)
- Gold medalist for academic excellence during M.Sc (2011)
- Junior research fellowship (JRF) from the Council of Scientific and Industrial Research (CSIR), India (June and December 2010)
- Received Achiever’s award for distinguished performance during M.Sc. (2010)