Manmohan Kumar

Ph. D. (Thesis submitted) from Department of Zoology, University of Delhi having almost 7 years of research experience in the field of host-pathogen interaction and fish immunology

RESEARCH AREA

Immunology, Host-pathogen interaction, Bacterial culture, *In-vivo* models, *In-vitro* cell culture (primary)

RESEARCH EXPERIENCE

Senior Research Fellow, Department of Zoology, University of Delhi (Apr'2017 – Dec' 2019)

- Data curation and validation, writing, reviewing and editing of drafts
- Analysis of apoptotic cell death using fluorescence microscopy, gel electrophoresis
- ELISA assay for quantification of cytokines, caspases' activities
- Transfection studies, mitochondrial DNA isolation
- cDNA synthesis, designing RT-qPCR primers, RT-qPCR
- Fish handling, injection of bacteria in fish (i.p., i.m.)

Junior Research Fellow, Department of Zoology, University of Delhi (Jan' 2015 – Apr' 2017)

- Isolation of macrophages from fish tissues
- Bacterial and macrophages cell culture handling
- Morphological identification of bacteria and eukaryotic cells by staining
- Total RNA isolation from tissues, cells and bacteria
- PCR and gel electrophoresis
- Degenerate primer designing, cloning, plasmid isolation
- Cytotoxicity assay

CONTACT INFORMATION

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AWARDS

CSIR-UGC JRF NET - 2014 (AIR 14)

CSIR-UGC NET - 2014 (AIR 51)

LANGUAGES

Hindi, English

ADDITIONAL INFORMATION

LinkedIn:
linkedIn.com/in/manmohan-kumar-8302519a

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EDUCATION

- **Ph. D. (Zoology) – Thesis submitted**

Department of Zoology, University of Delhi [2016-2021]

Ph. D. Thesis title – Role of TLR22 in Bacterial Pathogenesis in Fish

- **M. Phil. (Zoology)**

Department of Zoology, University of Delhi [2014-2016], 72.6%

- **M. Sc. (Zoology)**

Department of Zoology, University of Delhi [2011-2013], 72.83%

- **B. Sc. (Zoology)**

Kirori Mal College, University of Delhi [2011-2013], 75.27%

SKILLS

- Research management and methodology development
- Technical and working knowledge of scientific terminology and related research concepts
- Data curation, validation, and analysis
- Strong focus to compliance, project execution and timeline management
- Diligent, ability to work and function in team
- Strong work ethics and excellent interpersonal skills
- Good communication skills, commendable experience in Microsoft Office
- Knowledge of tools - SPSS, Origin, and GraphPad Prism

RESEARCH PUBLICATIONS

Kumar, M., Shelly, A., Dahiya, P., Ray, A., & Mazumder, S., (2022). *Aeromonas hydrophila* inhibits autophagy triggering cytosolic translocation of mtDNA which activates the pro-apoptotic caspase-1/IL-1β-nitric oxide axis in headkidney macrophages, Virulence, 13:1, 60-76. IF – 5.88

Kumar, M., Kumar, J., Sharma, S., Hussain, M.A., Shelly, A., Das, B., Yadav, A. K., & Mazumder, S. (2021). TLR22-mediated activation of TNF-α-caspase-1/IL-1β inflammatory axis leads to apoptosis of *Aeromonas hydrophila*-infected macrophages. *Molecular Immunology*, 137, 114-123. IF – 4.407

Sharma, S., **Kumar, M.**, Kumar, J., Srivastava, N., Hussain, M.A., Shelly, A., & Mazumder, S. (2021). *M. fortuitum*-induced CNS-pathology: Deciphering the role of canonical Wnt signaling, blood brain barrier components and cytokines. *Developmental & Comparative Immunology*,

MEMBERSHIP

Life member of Indian Immunology Society (Membership No. – LM/IIS/749/09/18)

122, 104111. IF – 3.636

Hussain, M.A., Datta, D., Singh, R., **Kumar, M.,** Kumar, Jai., Mazumder, S. (2019). TLR-2 mediated cytosolic-Ca^{2+} surge activates ER-stress-superoxide-NO signalosome augmenting TNF-α production leading to apoptosis of *Mycobacterium smegmatis*-infected fish macrophages. Scientific Reports, 9, 1-15. IF – 5.133

Majumdar, T., Sharma, S., **Kumar, M.**, Hussain, M.A., Chauhan, N., Kalia, I., Sahu, A.K., Rana, V.S., Bharti, R., Haldar, A.K. & Singh, A.P. (2019). Tryptophan-kynurenine pathway attenuates β–catenin-dependent pro-parasitic role of STING-TICAM2-IRF3-IDO1 signalosome in *Toxoplasma gondii* infection. *Cell Death & Disease*, 10(3), 1-19. IF – 8.469

Singh, R., Hussain, M. A., Kumar, J., **Kumar, M.**, Kumari, U., & Mazumder, S. (2017). Chronic fluoride exposure exacerbates headkidney pathology and causes immune commotion in *Clarias gariepinus*. *Aquatic Toxicology*, 192, 30-39. IF – 4.964

Srivastava, N., Shelly, A., **Kumar, M.**, Pant, A., Das, B., Majumdar, T., & Mazumder, S. (2017). *Aeromonas hydrophila* utilizes TLR4 topology for synchronous activation of MyD88 and TRIF to orchestrate anti-inflammatory responses in zebrafish. *Cell Death Discovery*, 3(1), 1-9. IF – 4.53

CONFERENCES

Kumar, M., Banerjee, C., Raman, R., Shrivastava, A., & Mazumder, S. (2019). ER-mitochondria cross-talk: Insights into molecular mechanism of *A. hydrophila* induced apoptosis in headkidney macrophages. Immunocon 2019, 46th Annual meeting of Indian Immunology Society, DAE convention centre, Anushaktinagar, Mumbai, India. (Poster presentation).

Kumar, M., Srivastava, N., Shelly, A., Pant, A., Das, B., Majumdar, T., & Mazumder, S. (2018). *Aeromonas hydrophila* expolits dichotomous TLR4 signaling as key survival factor in zebrafish. Immunocon 2018, 45th Annual meeting of Indian Immunology Society, THSTI Faridabad, India. (Poster presentation).