

# 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

Researchgate Id:  
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profile/Manmohan-Kumar-10

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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. 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-1 $\beta$ -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- $\alpha$ -caspase-1/IL-1 $\beta$  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*, 122, 104111. IF – 3.636

**Hussain, M.A., Datta, D., Singh, R., Kumar, M., Kumar, J., Mazumder,**

## MEMBERSHIP

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

S. (2019). TLR-2 mediated cytosolic- $\text{Ca}^{2+}$  surge activates ER-stress-superoxide-NO signalosome augmenting TNF- $\alpha$  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., Halder, A.K. & Singh, A.P. (2019). Tryptophan-kynurenine pathway attenuates  $\beta$ -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, 46<sup>th</sup> Annual meeting of Indian Immunology Society, DAE convention centre, Anushaktinagar, Mumbai (Poster presentation).

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