Curriculum Vitae'

DR. RAJEEV KUMAR SINGH

Name	**:**	**Dr Rajeev K. Singh**
Designation	**:**	Principal Scientist & Head, Germplasm Exploration, Evaluation and Conservation Division, ICAR-NBFGR
Professional Experience	**:**	24 years
Professional Qualification	**:**	M.Sc. (Biochemistry) M.Tech. (Biotechnology) PhD (Biotechnology)
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Link to Google Scholar	**:**	https://scholar.google.com/citations?user=CPD-TiQAAAAJ&hl=en
Current area of research	**:**	

- **Exploration and Discovery of Fish Species (07),** ***NEW TO SCIENCE***, including ***Rita bakalu*** (River Pranhita, Telangana) and ***Pangasius silasi***. (river Krishna, Telangana). ***Labeo rajasthanicus*** (a neotype from Tidi river, Rajasthan). A **cave-dwelling loach** ***Schistura sonarengaensis***, from Meghalaya, was discovered from northeast India

- **Development of Genomic Resources:** Development of Protein, mitochondrial and microsatellite markers for **25** fish species. Microsatellite markers were developed through genomic library approach as well as cross transferability. These markers are useful for variety of applications including genetic stock identification. As many as **Nine** mitochondrial genomes were fully sequenced which can be applied for evolutionary and comparative genomics.

- **Genetic Characterization** of 20 fish species was done through use of generated molecular markers and applied to describe intra-specific genetic diversity in their native distribution range. The information will be used by India to fill in AqGR Questionnaire for global status report.

- **Taxonomic validation of mahseer group** of fish species; discovered presence of Himalayan mahseer, *Tor putitora* lineage in rivers of central plateau; rediscovered *T. mosal* from its type locality; resolved the long standing taxonomic conflicts for use in accurate conservation measures.

- **Area of research expertise :** Conservation Genetic and Genomics

Awards/Recognitions:

Year	Details of Honour/Medal/Award
2018	Fellow of Academy of Environmental Biology (FAEB Honour)
2018	Dr B.S. Chauhan Medal awarded by Zoological Society of India
2015	Dr Hiralal Chaudhary Best Young Scientist (ICAR-CIFE)
2014	Best Research Group Member of ICAR-NBFGR
2013	Award for Young Scientist by Society of Biological Sciences & Rural Development
2011	Best Scientist of the Institute ICAR-NBFGR
1997	First Rank in M.Sc. (Biochemistry) and Awarded Gold Medal
1992	First Rank in the district in Intermediate
Year	**Scholarships**
1991-95	National Scholarship (Govt. of UP)
1997-99	GATE Scholarship
Not Availed	National Eligibility Test, 1998 (CSIR)
Not Availed	National Eligibility Test (NET), 1998 (ASRB)
Not Availed	National Eligibility Test (NET), 1997 (ASRB)

Specialised Overseas Training: Two months training **University of Stirling, Scotland, United Kingdom**

Publications:

Full length papers in referred journals	**:**	97 (Published/inPress)
Books	**:**	03
Chapters	**:**	05 (Academic Press 01 Springer 04)
Manuals	**:**	04

List of Publications (last five years)

1. Mukhim, D.K., Sarma, K., Choudhury, H., Chandran, R., Das, R., Singh, R.K., Warbah, D.P., Sarkar, U.K., & Sarma, D. (2024). *Schistura sonarengaensis*, a new species of cave-dwelling loach (Teleostei: Nemacheilidae) from Meghalaya, northeast India. *Journal of fish biology*. 10.1111/jfb.15856

2. Sarkar, U.K., Tenali, D.R. , Chandran R. & Singh, Rajeev K. (2024). Discovery of a New Glyptosternine Catfish *Creteuchiloglanis nuthemuensis* (Siluriformes: Sisoridae) from the Duphlokho River, Arunachal Pradesh, India. Biology Bulletin Reviews, https://doi.org/10.1134/S2079086424020099
3. Tenali, D.R., Sarkar, U.K., Chandran R. & Singh, Rajeev K. (2024) *Glyptothorax punyavratai*, a new species of catfish (Teleostae: Sisoridae) from Arunachal Pradesh, India. Ichthyological Exploration of Freshwaters /IEF-1195, 1-11. https://doi.org/10.23788/ IEF-1195
4. D Banerjee, DR Tenali, MC Adak, R Chandran, Rajeev K Singh, UK Sarkar (2024) *Glyptothorax hymavatiae*, a new sisorid catfish, (Teleostei: Sisoridae) from Arunachal Pradesh, North-Eastern India, Rec. zool. Surv. India: 124: 255-264, 2024 DOI: 10.26515 /rzsi/v123/iS2/2023/172496
5. Chandran, R., Singh, Rajeev K., Singh, A., Ganesan, K., Thangappan, A. K. T., Lal, K. K., & Mohindra, V. (2023). Evaluating the influence of environmental variables on the length-weight relationship and prediction modelling in flathead grey mullet, Mugil cephalus Linnaeus, 1758. *PeerJ*, *11*, e14884. https://doi.org/10.7717/peerj.14884
6. Chowdhury, L. M., Chaturvedi, S., Mandal, S., Kumar, R., Singh, Rajeev K., Lal, K. K., & Mohindra, V. (2023). Development of novel microsatellite markers for population differentiation and detection of natural selection in wild populations of butter catfish, *Ompok bimaculatus* (Bloch, 1794). *Molecular Biology Reports*, *50*(3), 2435–2444. https://doi.org/ 10.1007/s11033-022-08105-6
7. Mohindra, V., Chowdhury, L. M., Chauhan, N., Paul, A., Singh, R. K., Kushwaha, B., Maurya, R. K., Lal, K. K., & Jena, J. K. (2023). Transcriptome Analysis Revealed Osmoregulation Related Regulatory Networks and Hub Genes in the Gills of Hilsa shad, *Tenualosa ilisha*, during the Migratory Osmotic Stress. *Marine Biotechnology*, *25*(1), 161–173. https://doi.org/ 10.1007/s10126-022-10190-4
8. Singh, M., Saini, V. P., Mohindra, V., Ojha, M. L., Lal, K. K., & Singh, Rajeev K. (2023). Complete mitochondrial genome of golden variant of freshwater fish *Labeo rajasthanicus* (Cypriniformes: Cyprinidae): endemic to India. *Mitochondrial DNA. Part B. Resources*, *8*(12), 1364–1367. https://doi.org/10.1080/23802359.2023.2290128
9. Singh, Rajeev K., Kumar, R., Bhordia, A., Mandal, S., Kantharajan, G., Chandran, R., Ajithkumar, T., Mohindra, V., & Lal, K. K. (2023). Development of genome-wide novel microsatellite markers and genetic variability analysis of Asian seabass, *Lates calcarifer* (Bloch, 1790). *Aquaculture International*, *31*(5), 3055–3070. https://doi.org/10.1007/s10499-023-01116-5
10. Ayyathurai, K. P., Kodeeswaran, P., Mohindra, V., Singh, Rajeev K., Ravi, C., Kumar, R., Valaparambil, B., Thangappan, A. K. T., Jena, J., & Lal, K. K. (2022). Description of a new *Pangasius* (Valenciennes, 1840) species, from the Cauvery River extends distribution range of the genus up to South Western Ghats in peninsular India. *PeerJ*, *10*, e14258. https://doi.org/10.7717/peerj.14258
11. Chandran, R., Singh, A., Singh, Rajeev K., Mandal, S., Ganesan, K., Sah, P., Paul, P., Pathak, A., Dutta, N., Sah, R., Lal, K. K., & Mohindra, V. (2022). Phenotypic variation of

Chitala chitala (Hamilton, 1822) from Indian rivers using truss network and geometric morphometrics. *PeerJ*, *10*, e13290. https://doi.org/10.7717/peerj.13290

12. Kantharajan, G., Anand, A., Krishnan, P., Singh, Rajeev K., Kumar, K., Yadav, A. K., Mohindra, V., Shukla, S. P., & Lal, K. K. (2022). Applications of Sentinel-2 satellite data for spatio-temporal mapping of deep pools for monitoring the riverine connectivity and assessment of ecological dynamics: a case from Godavari, a tropical river in India (2016–2021). *Environmental Monitoring and Assessment*, *194*(8). https://doi.org/10.1007/s10661-022-10089-6
13. Kantharajan, G., Govindakrishnan, P. M., Singh, Rajeev K., Natalia, E. C., Jones, S. K., Singh, A., Mohindra, V., Kumar, N. K. R. K., Rana, J. C., Jena, J. K., & Lal, K. K. (2022). Quantitative assessment of sediment delivery and retention in four watersheds in the Godavari River Basin, India, using InVEST model — an aquatic ecosystem services perspective. *Environmental Science and Pollution Research International*, *30*(11), 30371–30384. https://doi.org/10.1007/s11356-022-24013-5
14. Kantharajan, G., Govindakrishnan, P. M., Chandran, Singh, Rajeev K., R. K., Kumar, K., Anand, A., Krishnan, P., Mohindra, V., Shukla, S. P., & Lal, K. K. (2022). Anthropogenic risk assessment of riverine habitat using geospatial modelling tools for conservation and restoration planning: a case study from a tropical river Pranhita, India. *Environmental Science and Pollution Research International*, *30*(13), 37579–37597. https://doi.org/10.1007/s11356-022-24825-5
15. Kantharajan, G., Yadav, A. K., Chandran, R., Singh, R. K., Mohindra, V., Krishnan, P., Kumar, K., Shukla, S., & Lal, K. K. (2022). Impact of terrestrial protected areas on the fish diversity and habitat quality: Evidence from tropical river Pranhita, India. *Journal for Nature Conservation*, *68*, 126187. https://doi.org/10.1016/j.jnc.2022.126187
16. Kumar, M. S., Kumar, R., Kushwaha, B., Singh, Rajeev K., & Mohindra, V. (2022). Genomic Research in Fishery Sector: Current Status and Future Prospects. *Indian Journal of Plant Genetic Resources/Indian Journal of Plant Genetic Resources*, *35*(3), 305–307. https://doi.org/10.5958/0976-1926.2022.00088.2
17. Saini, V.P., Lal, K.K., Ojha, M.L., Mohindra, V., Singh, Rajeev K. (2022). Development of Farm Type Golden Variant of *Labeo rajasthanicus* (Pratap Sunahari) through Captive Breeding. *Egyptian Journal of Aquatic Biology and Fisheries*, *26*(2), 545–553. https://doi.org/10.21608/ejabf.2022.234433
18. Singh, R. K., Divya, P., Mohindra, V., & Lal, K. K. (2022). Diversity of Fish Genetic Resources below the Species Level, Characterization and Applications in Resource Management. *Indian Journal of Plant Genetic Resources/Indian Journal of Plant Genetic Resources*, *35*(3), 301–304. https://doi.org/10.5958/0976-1926.2022.00087.0
19. Chowdhury, L. M., Maurya, R. K., Singh, Rajeev K., Mishra, S., Chauhan, N., Jena, J. K., & Mohindra, V. (2021). Discovery of alternatively spliced isoforms and long non-coding RNA in full length brain transcriptomes of anadromous Hilsa shad, *Tenualosa ilisha* (Hamilton, 1822). *Molecular Biology Reports*, *48*(11), 7333–7342. https://doi.org/10.1007/s11033-021-06735-w
20. Jayakumar, T., Ajithkumar, T.T., Singh, M., Mohindra, V., Singh Rajeev K. (2021) Integrated taxonomy, conservation and sustainable development: Multiple facets of biodiversity. Aquaculture Asia, 25 (2), 3-5

21. Muduli, C, G. Rathore, R. Srivastava, Singh Rajeev K., Tripathi, G., Paniprasad, K., Kundan Kumar (2021) Immuno-pathological changes in Indian catfish *Clarias magur* (Hamilton, 1822) upon experimental challenge with *Aeromonas hydrophila*. Indian J. Fish., 68(3): 77-85,
22. Sah, P., Mandal, S., Singh, Rajeev K., Dutta, N., Sah, R., Pathak, A., Srivastava, J., Singh, A., Lal, K. K., & Mohindra, V. (2021). Development of novel microsatellite marker panel in threatened tetraploid mahseer, *Tor tor* (Hamilton 1822) for insights into its genetic diversity and population structure. *Meta Gene*, *28*, 100880. https://doi.org/10.1016/j.mgene.2021.100880
23. Biswal, J.R., Singh, Rajeev K., Mandal,S., Chandran R., Singh, A., Sah, P., Lal, K.K., Jena J. K. & Mohindra, V. (2020) Intraspecific phenotype variations in olive barb *Systomus sarana* (Hamilton, 1822) population from different rivers is possibly linked to locomotive adaptations in caudal fin. *Indian Journal of Fisheries*, 67 (3), 18-28.
24. Chandran, R., Singh, Rajeev K, Singh, A., Paul, P., Sah, R.S., Kumar, R., Mohindra, V., Lal, K.K. & JK Jena (2020) Spatio-temporal variations in length-weight relationship and condition factor of two notopterids, *Chitala chitala* (Hamilton, 1822) and *Notopterus notopterus* (Pallas, 1769). Indian Journal of Fisheries, 67 (2), 120-124
25. Divya, P.R., Jency, P.M.E., Joy, L., Kathirvelpandian, A., Singh, Rajeev K., & Basheer, V.S. (2020) Population connectivity and genetic structure of Asian green mussel, *Perna viridis* along Indian waters assessed using mitochondrial markers. *Molecular Biology Reports* 47, 5061–5072. https://doi.org/10.1007/s11033-020-05575-4
26. Dutta, N., Singh, R. K., Pathak, A., Mohindra, V., Mandal, S., Kaur, G., & Lal, K. K. (2020). Mitochondrial DNA markers reveal genetic connectivity among populations of Osteoglossiform fish *Chitala chitala*. *Molecular Biology Reports*, *47*(11), 8579–8592. https://doi.org/10.1007 /s11033-020-05901-w
27. Joy, L., Paulose, S., Divya, P, Charan, R., Basheer, V.S., Kumar , R., Singh, Rajeev K., Mohindra, V. & Lal, K.K. (2020) Microsatellite marker development in Spanish mackerel *Scomberomorus commerson* using third generation sequencing technology. *Molecular Biology Reports* 47, 10005–10014. https://doi.org/10.1007/s11033-020-05975-6
28. Majhi, S. K., Chowdhury, M., Kumar, S., Singh, Rajeev K., Mohindra, V., & Lal, K. K. (2020). Resumption of donor-origin spermatogenesis in senescent goldfish *Carassius auratus* (Linnaeus, 1758) following spermatogonial cell therapy. *PeerJ*, *8*, e9116. https://doi.org/ 10.7717 /peerj.9116
29. Mandal, S., Singh, A., Sah, P., Singh, Rajeev K., Kumar, R., Lal, K. K., & Mohindra, V. (2020). Genetic and morphological assessment of a vulnerable large catfish, *Silonia silondia* (Hamilton, 1822), in natural populations from India. *Journal of Fish Biology*, *98*(2), 430–444. https://doi.org/10.1111/jfb.14587
30. Muduli, C., Tripathi, G., Paniprasad, K., Kumar, K., Singh, Rajeev K., & Rathore, G. (2020). Virulence potential of *Aeromonas hydrophila* isolated from apparently healthy freshwater food fish. *Biologia*, *76*(3), 1005–1015. https://doi.org/10.2478/s11756-020-00639-z
31. Sah, P., Mandal, S., Singh, Rajeev K., Kumar, R., Pathak, A., Dutta, N., Srivastava, J., Saini, V. P., Lal, K. K., & Mohindra, V. (2020). Genetic structure of natural populations of

endangered Tor mahseer, *Tor tor* (Hamilton, 1822) inferred from two mitochondrial DNA markers. *Meta Gene*, *23*, 100635. https://doi.org/10.1016/j.mgene.2019.100635

32. Dutta, N., Singh, Rajeev K., Mohindra, V., Pathak, A., Kumar, R., Sah, P., Mandal, S., Kaur, G., & Lal, K. K. (2019). Microsatellite marker set for genetic diversity assessment of primitive Chitala chitala (Hamilton, 1822) derived through SMRT sequencing technology. *Molecular Biology Reports*, *46*(1), 41–49. https://doi.org/10.1007/s11033-018-4414-2
33. Mohindra, V., Dangi, T., Tripathi, R. K., Kumar, R., Singh, Rajeev K., Jena, J. K., & Mohapatra, T. (2019). Draft genome assembly of *Tenualosa ilisha*, Hilsa shad, provides resource for osmoregulation studies. *Scientific Reports*, *9*(1). https://doi.org/10.1038/s41598-019-52603-w
34. Mohindra, V., Divya, B. K., Kumar, R., Singh, Rajeev K., Dwivedi, A. K., Mandal, S., Masih, P., Lal, K. K., & Jena, J. K. (2019). Genetic population structure of a highly migratory Hilsa Shad, *Tenualosa ilisha*, in three river systems, inferred from four mitochondrial genes analysis. *Environmental Biology of Fishes*, *102*(7), 939–954. https://doi.org/10.1007/s10641-019-00881-8