

Curriculum Vitae

RANJANA, Ph.D.

Scientist – D,
DNA Barcode Lab,
Southern Regional Centre,
Zoological Survey of India,
130, Santhome High Road, Chennai
Tamil Nadu – 600028

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Research Interest

Molecular phylogeny, Population Genetics, Conservation Genetics, Molecular Ecology and Wildlife Forensic.

EDUCATION

2001-2005 Ph.D. In Life Science/Environmental Biology from A.P.S. University Rewa (M.P.)

Ph.D. Thesis: “Molecular characterization of Golden Mahseer (*Tor putitora*) for Stock Identification”.

1996-1998 M. Sc. Biotechnology from Devi Ahilya Vishwa Vidyalaya, Indore (M.P.)

M.Sc. Thesis: ‘Isolation, purification, characterization and immobilization of cellulase by the germinating seeds of *Vigna sinensis*’.

1993-1996 B. Sc. Zoology Hons. from Dayalbagh Educational Institute, Agra (U.P.)

PROFESSIONAL EXPERIENCES

RESEARCH

Scientist –D

Southern Regional Centre, Zoological Survey of India, Chennai **2017-Present**
DNA barcoding of Western and Eastern Ghats of fauna

Post-Doctoral Fellow

National Bureau of Fish Genetic Research, Lucknow **2013–2017**
“Genetic Variability Studies in Highly Endangered Ganges Soft-Shelled Turtle (*Trionyx gangeticus*) Through Molecular Markers”.

Assistant Professor

Saaii College of Medical Science and Technology, Kanpur **2010-2013**
Teaching of Post Graduate and Under Graduate of Biotechnology, Microbiology and medical microbiology

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Conducted practical experiments, workshop, and exams.

Research Associate

Wildlife Forensic lab, Wildlife Institute of India, Dehradun **2006-2009**

Managing the forensic Laboratory and involved in different training program and workshop.

Solving the wildlife forensic cases.

Involved in different project going in forensic lab.

Population structure of tiger, elephant, wild pig and deer using different markers.

Generated DNA profiling of different endangered Wildlife and Domestic Animals.

Senior Research Fellow

National Bureau of Fish Genetic Research, ICAR, Lucknow **2005-2006**

“Development of microsatellite enriched genomic library of *Chitala chitala* for population genetic studies”

Senior Research Fellow

National Bureau of Fish Genetic Research, ICAR, Lucknow **2000-2004**

“Germplasm Inventory Evaluation and Genebanking of Freshwater Fishes”

Crypreservation,

Worked on Molecular Characterization of fresh water fishes for stock identification using different molecular markers. Developed partial genomic library, species specific microsatellite markers for population genetics.

TRAINING & COURSES

- Chromatography and Enzymology, Guru Rupan Sikshan Sewa Sanathan Mahavidyalaya, Orai 23rd to 24th September 2011
- Hands on Training on Genetic Analyzer 3130 Hard ware and Soft ware Held at state of art genomics and proteomics training facility. Lab India Gurgaon, 19th to 21st June, 2007.
- Molecular Markers: Tools for Fish Population Genetics Analysis. National Bureau of Fish Genetic Resources, Lucknow 29th Oct. to 10th Nov, 2001.
- Training on Bioinformatics, School of Biotechnology, Indore, M.P., 4th to 6th August 1998.
- Small scale industrial training program, Indore Biotech Inputs and Research Pvt. Ltd, Indore, 20th to 23rd January M.P. 1998.
- Molecular DNA Technique, Central Institute of Medicinal and Aromatic Plants (CIMAP), CSIR, Lucknow, 1st May to 1st July, 1997

KNOWLEDGE & SKILLS

- DNA Finger printing technology
- Population genetic structure analysis
- Population genetic studies through various molecular markers like Allozyme, Microsatellite and RFLP

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- DNA/RNA isolation, PCR, sequencing and molecular phylogenetic analysis.
- Development of genomic library, species specific microsatellite markers for population genetics.
- Designing of primers
- Cloning
- Preparation of genomic library
- Data analysis with different software
- Screening and isolation of pure culture bacteria.
- Knowledge of microbial technique.

COMPUTER PROFICIENCY

Windows, MS Office, Software Genepop 3.4., GDA, Primer3, GENETIX ver. 4.0, DNASTAR, Bioedit Software's- sequencing Analysis Software™, Sequence analysis V3 and V5.2, Gene mapper V3, Alignment tools using mac, clustal X and W, Auto Assembler version 2.0, MEGA, Arlequin, DNA SP, Network analysis softwares like Clustal (1.8), NETWORK 3.X, Phylogenetic Network Analysis Software,

AWARDS AND RECOGNITIONS

- Woman Post Doctoral Fellow, University Grants Commission, Govt. of India. 2013-2017.
- Research Associate, Wildlife institute of India, Dehradun, 2006-2009.
- Senior Research Fellowship, ICAR, India, 2000 – 2006.

SYMPOSIUM/SEMINAR/POSTER PRESENTED/ATTENDED

1.	International Conference, The 10 th Indian Fisheries and Aquaculture Forum (10ifaf) on "Study of population diversity of freshwater turtle in India"	12-15 th November 2014	National Bureau of Fish Genetic Resources, Lucknow.
2.	International Conference on Environmental Technology and Sustainable Development: Challenges & Remedies	21 st -23 rd February 2014	Babasaheb Bhimrao Ambedkar University, Lucknow
3.	National Symposium on "Biodiversity And Food Security-Challenges and Devising Strategies	10 th to 11 th December, 2011	Indian Institute of Pulses Research, Kanpur
4.	Annual Research Seminar Topic: Forensically Informative Nucleotide Sequencing (FINS) as a Tool for Dealing Wildlife Offences.	24 th to 27 th Sept., 2008	Wildlife Institute of India, Dehradun
5.	Workshop on the Biotechnology Education	6 th -8 th Oct., 2008	Dolphin Institute of Biomedical Sciences, Dehradun
6.	Annual Research Seminar	24th to 27 th	Wildlife Institute of

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	Topic: DNA profiling of Indian species: Dealing closely related species	Sept., 2007	India, Dehradun
7.	Annual Research Seminar Topic: DNA profiling of Indian mammals: A need in dealing wildlife offences	14 th to 17 th Sept., 2006	Wildlife Institute of India, Dehradun
8.	National Symposium on Re-assessment of Fish Genetic Resources in India and need to Evolve Sustainable Methodology for Conservation	26 th to 27 th April, 2005	National Bureau of Fish Genetic Resources, Lucknow
9.	22nd Annual Session of The Academy of Environmental Biology	11 th to 13 th Sept., 2002.	National Bureau of Fish Genetic Resources, Lucknow
10.	In symposium on Captive breeding for aquaculture and fish gerplasm conservation	29 th to 30 th July, 2001	National Bureau of Fish Genetic Resources, Lucknow

SCIENTIFIC PUBLICATIONS

1. **Ranjana Bhaskar** and Vindhya Mohindra (2018). Variability in DNA barcodes reveals new haplotype of freshwater turtles from North region of India. Mitochondrial DNA Part B (Accepted)
2. **Ranjana Bhaskar and** Surendra Prakesh Goyal (2016) Use of universal mtDNA primer for identifying success: How good are these for Indian deer species? International Journal of Advanced Biological Research. I.J.A.B.R, VOL. 6(3) 2016: 399-403
3. **Ranjana Bhaskar**, Imran Khan, Surendra Prakesh Goyal (2011) Identification of Forensic Case Using Molecular Markers: A Case Study of Hyaena (*Hyaena hyaena*). International journal of Pharma and Bioscience. ISSN 0975-6299 Volume 2 (4).
4. Vindhya Mohindra, **Ranjana**, Lavie khulbe, A.G. Ponniah, Kuldeep K. Lal, "Microsatellite loci to assess genetic variation in *Tor putitora*" Journal of Applied Ichthyology. 20(2004), 466-469.
5. Rajeev Kumar Sing, Vindhya Mohindra, **Ranjana**, Peyush punia, A. Gopalakrishnan, R. N. Shkula, Kuldeep K. Lal, (2008) "Identification of polymorphic allozyme markers for assessing genetic variability in *Tor putitora*" Fishery Technology, Vol.45 (No.1).
6. Reeta Sharma, Heiko Stuckas, **Ranjana Bhaskar**, Sandeep Rajput, Imran Khan, Surendra Prakash Goyal and Ralph Tiedemann, (2008), mtDNA indicates profound population structure in Indian tiger (*Panthera tigris tigris*)" Conservation Genetics (10), 909-914.
7. Reeta Sharma, Heiko Stuckas, Moll, K., Imran Khan, **Ranjana Bhaskar**, Surendra Prakash Goyal and Tiedemann, R. (2008). Fourteen new di- and tetranucleotide microsatellite loci for the critically endangered Indian tiger (*Panthera tigris tigris*). Molecular Ecology Resources (8), 1480-1482.

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8. Peyush Punia, H.S. Gupta, Rajeev K. Singh, Vindhya mohindra, K.K. Lal, **Ranjana**, V.S. Chauhan and W. S. Lakra 2006. Identification of microsatellite from enriched genomic library of *Chitala chitala* for population genetic studies. *Molecular Ecology Notes* 6 (4), 1263-1265.
9. Reeta Sharma, Heiko Stuckas, **Ranjana Bhaskar**, Imran Khan, Surendra Prakash Goyal, Ralph Tiedemann. 2010. Genetically distinct population of Bengal tiger (*Panthera tigris tigris*) in Terai Arc Landscape (TAL) of India. *Mammalian Biology*, Volume 76 (4), 484-490.
10. Chaturvedi; Anshumala ; Vindhya Mohindra; Rajeev K Singh; Kuldeep K Lal; Peyush Punia; **Ranjana** Bhaskar; Anup Mandal; Lalit Narain; Wazir S Lakra (2011). Population Genetic Structure and Phylogeography of Cyprinid fish, *Labeo dero* (Hamilton Buchanan) inferred from Allozyme and Microsatellite DNA Marker Analysis. *Molecular Biology Repts* ISSN: 0301-4851, Vol: 38, Issue: 5, Start page: 3513, # of pages: 17

Paper presented/ published as abstracts or extended abstracts

1. Vindhya Mohindra, A. Gopalakrishnana, **Ranjana**, Kuldeep K. Lal and W. S. Lakra. Genetic relationship of five species of Mahseer species from India inferred from control region of mitochondrial DNA. International Symposium on the Mahseer Kula Lumpur, Malaysia. 29-30th March 2006.
2. Rajeev K. Singh, **Ranjana**, Kuldeep K. Lal, Vindhya Mohindra, Peyush Punia, Ajay Singh, R. S. Sah and D. Kapoor. (2005). Identification of polymorphic allozyme markers in two cyprinid fish, *Labeo calbasu* and *Tor putitora* to assess genetic variability. National Symposium on Re-assessment of Fish Genetic Resources in India and need to Evolve Sustainable Methodology for Conservation, 26-27 April at N.B.F.G.R. Lucknow. Pp 163.
3. Mohindra Vindhya, M. Palanichamy, Anita Mishra, Kuldeep K. Lal, Neeraj Sood, Lavie Khulbe, Peyush Punia, Rajeev Singh, Tanya Chauhan, **Ranjana**, Anup Mandal, Digvijay Sing, Sunit Singh, Lalit narain, A. Gopalakrishnana and A. G. Ponniah. " Storage media and tissue suitability for long term tissue repository programme". In symposium on Captive breeding for aquaculture and fish gerplasm conservation, Lucknow, 29-30 July, 2001, contributed paper no 67.
4. Narain, L., Lavie, K., Chauhan, T., Mathews, A., Mandal, A., Anshumala, **Ranjana**, Mohendra, V., Rajeev K. Singh, Punia, P., and Kuldeep K Lal. "Conserved Flanking Sequences as a tool for identifying microsatellite markers for fish diversity and population genetics. In symposium on life history traits of freshwater fish population for its utilization in conservation. Lucknow 6th June, 2002, p AF-11.
5. Mohindra Vindhya, Anshumala Bhardwaj, Tanya Chauhan, **Ranjana**, Peyush Punia, Rajeev K. Singh, and Kuldeep K. Lal. "Microsatellite DNA markers in *Lebeo dero* for population studies". 22th Annual Session of The Academy of Environmental Biology held at National Bureau of Fish Genetic Resources, Lucknow, India, 11-13 September 2002, and p85.
6. Peyush Punia, Vindhya Mohindra, Rajeev K. Singh, H.S. Gupta and **Ranjana**. Construction of microsatellite enriched genomic library of *Chitala chitala* for population genetic studies (2005). 7th Indian Fisheries Forum, Inland Fisheries Division, Bangalore. 8-12 Nov.

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DNA sequences submitted to NCBI, USA
Following sequences have been accepted at NCBI, USA

More than 100 sequences submitted in NCBI

S. NO.	Species	Comman Name	Gene	Assession NO.
1	<i>Panthera tigris</i>	Tiger	NADH5	EU434734
2	<i>Panthera tigris</i>	Tiger	NADH5	EU434735
3	<i>Panthera tigris</i>	Tiger	NADH5	EU434736
4	<i>Panthera tigris</i>	Tiger	NADH5	EU434737
5	<i>Panthera tigris</i>	Tiger	NADH5	EU434738
6	<i>Panthera tigris</i>	Tiger	NADH5	EU434739
7	<i>Panthera tigris</i>	Tiger	NADH5	EU434740
8	<i>Panthera tigris</i>	Tiger	NADH5	EU434741
9	<i>Panthera tigris</i>	Tiger	NADH5	EU434742
10	<i>Panthera tigris</i>	Tiger	NADH5	EU434743
11	<i>Panthera tigris</i>	Tiger	NADH5	EU434744
12	<i>Panthera tigris</i>	Tiger	NADH5	EU434745
13	<i>Panthera tigris</i>	Tiger	NADH5	JX074818
14	<i>Panthera tigris</i>	Tiger	NADH5	JX074819
15	<i>Panthera tigris</i>	Tiger	NADH5	JX074820
16	<i>Panthera tigris</i>	Tiger	NADH5	JX074821
17	<i>Panthera tigris</i>	Tiger	NADH5	JX074822
18	<i>Panthera tigris</i>	Tiger	NADH5	JX074823
19	<i>Panthera tigris</i>	Tiger	NADH5	EU395630
20	<i>Panthera tigris</i>	Tiger	NADH5	EU395631
21	<i>Panthera tigris</i>	Tiger	NADH5	EU395632
22	<i>Panthera tigris</i>	Tiger	NADH5	EU395633
23	<i>Panthera tigris</i>	Tiger	NADH5	EU362123
24	<i>Panthera tigris</i>	Tiger	control region	EF392686
25	<i>Panthera tigris</i>	Tiger	12S ribosomal RNA	EF392685
26	<i>Panthera tigris</i>	Tiger	cytochrome b	EF392684
27	<i>Panthera tigris</i>	Tiger	16S ribosomal RNA	EF392683
28	<i>Panthera tigris</i>	Tiger	16S ribosomal RNA	EF394928
29	<i>Panthera tigris</i>	Tiger	cytochrome b	EF394927
30	<i>Capricornis sumatraensis</i>	Serow	cytochrome b	EF202142
31	<i>Capricornis sumatraensis</i>	Serow	16S ribosomal RNA	EF202141
32	<i>Panthera pardus</i>	Leopard	16S ribosomal RNA	EF202838
33	<i>Hyaena hyaena</i>	Hyaena	16S ribosomal RNA	EF202837
34	<i>Hyaena hyaena</i>	Hyaena	cytochrome b	EF107524
31	<i>Hyaena hyaena</i>	Hyaena	16S ribosomal RNA	EF107510
32	<i>Francolinus pondicerianus</i>	Gray Partridge	cytochrome b	DQ868945
33	<i>Francolinus francolinus</i>	Black Partridge	16S ribosomal RNA	DQ868944
34	<i>Axis axis</i>	Chital	cytochrome b	EF051260
35	<i>Francolinus francolinus</i>	Black Partridge,	cytochrome b	DQ864981
36	<i>Uncia uncia</i>	Snow leopard	cytochrome b	EU362126
37	<i>Felis chaus</i>	Jungle cat	cytochrome b	EU362125

38	<i>Panthera pardus</i>	leopard	cytochrome b	EU362124
39	<i>Panthera tigris</i>	Tiger	cytochrome b	EU362123
40	<i>Gazella bennettii</i>	Indian gazelle	cytochrome b	EU223370
41	<i>Cervus unicolor</i>	sambar	cytochrome b	EU223369
42	<i>Panthera pardus</i>	leopard	cytochrome b	EU223366
43	<i>Gazella bennettii</i>	Indian gazelle	16S ribosomal RNA	EU223371
44	<i>Cervus unicolor</i>	sambar	16S ribosomal RNA	EU223368
45	<i>Panthera pardus</i>	leopard	16S ribosomal RNA	EU223367
46	<i>Canis aureus</i>	golden jackal	12S ribosomal RNA	EU084670
47	<i>Cervus duvaucelii</i>	Barasingha	12S ribosomal RNA	EU084669
48	<i>Cervus duvaucelii</i>	Barasingha	16S ribosomal RNA	EU084668
49	<i>Bubalus bubalis</i>	buffalo	cytochrome b	EU296625
50	<i>Boselaphus tragocamelus</i>	Nilgai	cytochrome b	EU296628
51	<i>Boselaphus tragocamelus</i>	Nilgai	cytochrome b	EU296627
52	<i>Meles meles</i>	Eurasian badger	16S ribosomal RNA	EU344980
53	<i>Pangasius pangasius</i>	Yellowtail catfish	Microsatellite	DQ835645
54	<i>Pangasius pangasius</i>	Yellowtail catfish	Microsatellite	DQ835643
55	<i>Pangasius pangasius</i>	Yellowtail catfish	Microsatellite	DQ835644
56	<i>Pangasius pangasius</i>	Yellowtail catfish	Microsatellite	DQ835642
57	<i>Pangasius pangasius</i>	Yellowtail catfish	Microsatellite	DQ835641
58	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525392
59	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525391
60	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525389
61	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525390
62	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525393
63	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525394
64	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525395
65	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525396
66	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525397
67	<i>Chitala chitala</i>	clown knifefish	Microsatellite	DQ525398
68	<i>Cervus eldi eldi</i>		cytochrome b	EU870590
69	<i>Lynx lunx</i>	Eurasian lynx	Cytochrome b	EU434733
70	<i>Prionailurus bengalensis</i>	Leopard cat	Cytochrome b	EU434732
71	<i>Gazella bennettii</i>	Indian gazelle	Cytochrome b	EU434731
72	<i>Gazella bennettii</i>	Indian gazelle	16s RNA	EU434730
73	<i>Axis axis</i>	Chital	Chytochrome b	EU870593
74	<i>Bubalus bubalis</i>	Buffalo	Chytochrome b	EU296626
75	<i>Cervus duvaucelii</i>	Barasingha	Cytochrome b	EU921907
76	<i>Cervus eldi eldi</i>	Sangai deer	Chytochrome b	EU870591
77	<i>Axis porcinus</i>	Hog deer	Cytochrome b	EU870592
78	<i>Muntiacus muntjak</i>	Muntjak	Chytochrome b	EU285566
79	<i>Lissemys punctata</i>	Indian flapshell turtle	Cytochrome c oxidase I	MF432727- MF432785
80	<i>Nilssonia Gangaticus</i>	Ganges Soft-shelled Turtle	Cytochrome c oxidase I	MF432821- MF432839

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81	<i>Nilssonina hurum</i>	Indian peacock softshell turtle	Cytochrome c oxidase I	MF432840, MF432841
82	<i>Chitra Indica</i>	Indian narrow-headed softshell turtle	Cytochrome c oxidase I	MF432789- MF432797
83	<i>Kachuga smithii</i>	Brown roofed turtle	Cytochrome c oxidase I	MF432800- MF432806
84	<i>Hardella thurjii</i>	Crowned river turtle	Cytochrome c oxidase I	MF432798, MF432799
85	<i>Kachuga tecta</i>	Indian roofed turtle	Cytochrome c oxidase I	MF432807- MF432815
86	<i>Kachuga tentoria</i>	Indian tent turtle	Cytochrome c oxidase I	MF432816- MF432820
87	<i>Batagur kachuga</i>	Red-crowned roofed turtle	Cytochrome c oxidase I	MF432786- MF432788
88	<i>Lissemys punctata</i>	Indian flapshell turtle	Cytochrome b	MF432863- MF432924
89	<i>Nilssonina Gangaticus</i>	Ganges Soft-shelled Turtle	Cytochrome b	MF432938- MF432959
90	<i>Nilssonina hurum</i>	Indian peacock softshell turtle	Cytochrome b	MF432960, MF432961
91	<i>Chitra Indica</i>	Indian narrow-headed softshell turtle	Cytochrome b	MF432928- MF432937
92	<i>Kachuga smithii</i>	Brown roofed turtle	Cytochrome b	MF432856- MF432862
93	<i>Hardella thurjii</i>	Crowned river turtle	Cytochrome b	MF432842, MF432843
94	<i>Kachuga tecta</i>	Indian roofed turtle	Cytochrome b	MF432844- MF432851
95	<i>Kachuga tentoria</i>	Indian tent turtle	Cytochrome b	MF432852- MF432855
96	<i>Batagur kachuga</i>	Red-crowned roofed turtle	Cytochrome b	MF432925- MF432927