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Principal Scientist

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Date of Birth	1 st February, 1968
Sex	Male

25 Years of dedicated service to the nation

Academic qualifications

1.	PhD (2006) from F/O Medical Sciences, University of Miyazaki, Miyazaki, Japan.
2.	M.Sc in Animal Biotechnology (1992) from NDRI, Karnal, Haryana, India.
3.	B.Sc. in Veterinary Science & Animal Husbandry (1990) from India.

Academic awards	<ul style="list-style-type: none"> • ICAR (India) Junior Research Fellow for M.Sc. degree program. • Japanese Government (Monbukagakusho) Scholarship for PhD degree program. • Best ICAR-CIFA Young Scientist Award 2007. • DBT-CREST Fellowship in ‘Stem Cell Therapy & Regenerative Medicine’.
Post-Doc	<ul style="list-style-type: none"> • Higher research studies in the subject of Biotechnology (including doctoral degree program) from Japan (F/o Medical Sciences, University of Miyazaki, Miyazaki, Japan) under Japanese Govt. (MONBUKAGAKUSHO) Scholarship during April, 2002 to September, 2006: Worked on Bioregulation and eukaryotic chromatin organization using gene targeting technology in chicken DT40 cell line. • DBT-CREST Award in the areas of ‘Stem Cell Therapy and Regenerative Medicine’: Post-Doctoral program from 01.11.2012 to 07.08.2013 at Scribe INRA, Rennes, France.
Research Experiences/ Acheivements	<ul style="list-style-type: none"> • Cell Culture and Molecular Genetics/Genetic Manipulations • First to genetically characterize Indian major carps. • Eukaryotic Chromatin assembly studies via Gene Targeting. • Chromatin Organization: Epigenetic regulations. • Establishment of enriched fish spermatogonial stem cell cultivation and <i>in vitro</i> production of sperms from cultivated spermatogonial cells. • Pioneered in generating Transgenic Indian carp. • Pioneered in establishing Model carp fish using targeted gene editing.
Current Research Interests	<ul style="list-style-type: none"> • Spermatogonial stem cell (SSC) culture, characterization and gene manipulation in <i>Labeo rohita</i>, a commercially important farmed carps. • Fish transgenesis and targeted gene editing. • Identification and characterization of salinity tolerant transcripts in <i>Machrobrachium rosenbergii</i>.
As a major supervisor of Dissertation/Thesis works	<ul style="list-style-type: none"> • M.Sc. (Biotechnology): Awarded degree for six students. • PhD (Biotechnology): Three students awarded degree and five students continuing.

Publications

1. Patra S. K., Chakrapani V., Panda R. P., Mohapatra C., Jayasankar P. and **Barman H. K.** (2015). First evidence of molecular characterization of rohu carp Sox2 gene being expressed in proliferating spermatogonial cells. *Theriogenology* DOI: 10.1016/j.
2. Mohapatra C., Patra S. K., Panda R. P., Mohanta R., Saha A., Saha J. N., Mahapatra K. D., Jayasankar P. and **Barman H. K.** (2014) Gene structure and identification of minimal promoter of *Pou2* expressed in spermatogonial cells of rohu carp, *Labeo rohita*. *Molecular Biology Reports*, 41(6): 4123-4132.
3. **Barman H. K.**, Mohanta R., Patra S. K., Chakrapani V., Panda R. P., Nayak S., Jena S., Jayasankar P. and Nandanpawar P. (2015) The β -actin gene promoter of rohu carp (*Labeo rohita*) drove reporter gene expressions in transgenic rohu and various cell lines including spermatogonial stem cells. *Cellular & Molecular Biology Letters*, **20**, DOI: 10.1515/cmb-le-2015-0010.
4. Panda R. P., Chakrapani V., Patra S. K., Saha J. N., Jayasankar P., Kar B., Sahoo P. K., Barman H. K. (2014) First evidence of comparative responses of Toll-like receptor 22 (TLR22) to relatively resistant and susceptible Indian farmed carps to *Argulus siamensis* infection. *Developmental and Comparative Immunology*, 47: 25-35.
5. Mohapatra C. and **Barman H. K.** (2014) Identification of promoter within the first intron of *Plzf* gene expressed in carp spermatogonial stem cells. *Molecular Biology Reports*, 41: 6433-6444.
6. Mohanta R., Jayasankar P., Mahapatra K. D., Saha J. N. and **Barman H. K.** (2014) Molecular cloning, characterization and functional assessment of the myosin light polypeptide chain 2 (*mylz2*) promoter of farmed carp, *Labeo rohita*. *Transgenic Research*, **23(4)**: 601-607
7. Dutta Mohapatra S., Kumar K., Jayasankar P. and **Barman H. K.** (2013) Establishment of dry-down hypoxic stress treatment protocol for snakehead freshwater fish, *Channa striatus*. *International Journal of Fisheries and Aquatic Study*, **1(2)**: 36-39.
8. Robinson N., Sahoo P. K., Baranski M., Mahapatra K. D., Saha J. N., Das S., Mishra Y., Das P., **Barman H. K.**, Eknath A. E. (2012) Expressed Sequences and Polymorphisms in Rohu Carp (*Labeo rohita*, Hamilton) Revealed by mRNA-seq. *Marine Biotechnology*, **14**: 620-633.
9. **Barman H. K.**, Patra S. K., Das V., Mohapatra S. D., Jayasankar P., Mohapatra M., Mohanta R., Panda R. P. and Rath S. N. (2012) Identification and characterization of differentially expressed transcripts in the gills of freshwater

- prawn (*Macrobrachium rosenbergii*) under salt stress. *The Scientific World Journal*: Article ID 149361, 11 pages.
10. Panda R. P., **Barman H. K.** and Mohapatra C. (2011) Isolation of enriched carp spermatogonial stem cells from *Labeo rohita* testis for *in vitro* propagation. *Theriogenology*, **76**: 241-251.
 11. **Barman H. K.**, Panda R. P., Mohapatra C., Swain A. & Eknath A. E. (2011) Identification of genes preferentially expressed in testis and spermatogonial cells of *Labeo rohita* by subtractive and suppressive hybridization. *Aquaculture Research* **42**:1196-1205.
 12. Mohapatra C., **Barman H. K.**, Panda R. P., Kumar S., Das V., Mohanta R., Mohapatra S. D., Jayasankar P. (2010) Cloning of cDNA and prediction of peptide structure of Plzf expressed in the spermatogonial cells of *Labeo rohita*. *Marine Genomics*, **3**: 157-163.
 13. **Barman H. K.**, Das V., Mohanta R., Mohapatra C., Panda R. and Jayasankar P. (2010) Expression analysis of β -actin promoter of rohu (*Labeo rohita*) by direct injection into muscle. *Current Science*, **99**: 1030-1032.
 14. **Barman H. K.**, Takami Y., Ono T., Nishijima H., Shibahara K., Sanematsu F. and Nakayama T. (2008) Histone acetyltransferase-1 regulates integrity of cytosolic histone H3-H4 containing complex. *Biochem. Biophys. Res. Commun.* **373**: 624-630.
 15. Anil T., Das B. K., **Barman H. K.**, Samal S. K. (2008) Genetic fingerprinting of *Aeromonas hydrophila* isolated from diseased freshwater fishes of eastern India. *E-planet* **6**: 1-6.
 16. Nakayama M., Suzuki H., Yamamoto-Nagamatsu, N., **Barman H.K.**, Kikuchi H., Takami Y., Toyonaga K., Yamashita K. and Nakayama T. (2007) HDAC2 controls IgM and L-chain gene expressions via EBF1, Pax5, Ikaros, Aiolos and E2A gene expressions. *Genes to Cells* **12**: 359-373.
 17. **Barman H. K.**, Takami Y., Ono T., Nishijima H., Sanematsu F., Shibahara K. and Nakayama T. (2006) Histone acetyltransferase 1 is dispensible for replication-coupled chromatin assembly but contributes to recover DNA damages created following replication blockage in vertebrate cells. *Biochem. Biophys. Res. Commun.* **345**: 1547-1557.
 18. Sanematsu F, Takami Y., **Barman H. K.**, Fukagawa T., Ono T., Shibahara K. and Nakayama T. (2006) Asf1 Is Required for Viability and Chromatin Assembly during DNA Replication in Vertebrate Cells. *J. Biol Chem.* **218**: 13817-13827.
 19. **Barman H. K.**, Barat A., Yadav B. M., Banerjee S., Meher P. K., Reddy P. V. G. K. and Jana R. K. (2003) Genetic variation between four species of Indian major carps as revealed by random amplified polymorphic DNA assay. *Aquaculture* **217**:

	<p>115-123.</p> <p>20. Barman H. K. and Rajput Y. S. (1994) Inhibition of mouse x mouse hybridoma growth by milk and colostrums. <i>Lait</i> 74: 473-478.</p>
Book-chapters/ reviews	<ol style="list-style-type: none"> 1. Kikuchi H., Barman H. K., Nakayama M., Takami Y., and Nakayama T. (2006) Participation of histones, histone modifying enzymes and histone chaperones in vertebrate cell functions. In: <i>Reviews and Protocols in DT40 Research</i>, Series: Subcellular Biochemistry, Vol. 40, Buerstedde, Jean-Marie & Takeda, Sunichi (Eds.), Springer-Verlag, Berlin. 2. Kikuchi H., Barman H. K., Nakayama M., Takami Y. and Nakayama T. (2008) Studies on epigenetic control of B cell functions using the DT40 cell line. <i>Immunogenetics</i>, Nova Publications, (<i>In Press</i>). 3. Barman H. K. (2004) Hybridoma Technology. In: <i>Text book of Fish Genetics & Biotechnology</i>, Reddy, P.V.G.K.; Ayyapan, S.; Thampy, D.M. & Krishna, G. (Eds.), Indian Council of Agricultural Research, New Delhi, India. 4. Barman H. K. and Rajput Y. S. (1993) Serum-free and serum-containing media for hybridoma culture. <i>J. Sci. Industr. Res.</i> 52: 803-807.



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