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<b>Department</b>	Fish Nutrition & Physiology Division
<b>Institute/ University</b>	ICAR-Central Institute of Freshwater Aquaculture
<b>Address</b>	P.O. Kausalyaganga, Bhubaneswar 751 002, Odisha, India
<b>Date of Birth</b>	19.01.1973
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<b>Language known</b>	English, Hindi, Bengali
<b>Educational Qualifications</b>	
<b>Post-Doc</b>	Post-Doc in Reproduction technology at SCRIBE,INRA, Rennes, France
<b>Ph.D.</b>	Ph.D. (Animal Physiology) in 2005 from Indian Veterinary Research Institute, Izatnagar, UP,India
<b>Post-graduation</b>	M.Sc. (Animal Physiology) in 1997 from National Dairy Research Institute, Karnal, India
<b>Graduation</b>	B.V.Sc. & A.H. in 1995 from Bidhan Chandra Krishi Viswavidyalaya,

	Mohanpur, India.
<b>Research Experience</b>	:+20 years research experience
<b>Institutional research</b>	<ul style="list-style-type: none"> <li>• Effect of heat stress on the reproductive function of rohu and its amelioration strategy.</li> <li>• Amelioration of heat stress in <i>Labeo rohita</i> through dietary intervention</li> <li>• Up scaling of photothermal manipulation technique for offseason gonadal maturation in Indian major carp</li> </ul>
<b>Sponsored project research</b>	<ul style="list-style-type: none"> <li>❖ Regulation of Kisspeptin and GnRH during reproduction in <i>Labeo rohita</i> under varied environmental conditions. (As PI of DBT(RGYI) Project; 2013-2016).</li> <li>❖ Molecular characterization of gonadotropin and gonadotropin receptors and their regulation during photothermal manipulation of reproduction in rohu (<i>Labeo rohita</i>) (As PI of SERB, New Delhi Project ;2012-2015)</li> <li>❖ Screening and characterization of an efficient <math>\Delta</math>-6 Desaturase among warm freshwater fishes in India.( As Mentor Scientist for DST Women Scientist (WOS-A) Project; 2011-2014)</li> </ul>
<b>Teaching/ Guidance/ Paper setting &amp; evaluation</b>	<ul style="list-style-type: none"> <li>• <b>Student guide: PhD student:</b>2 awarded and 2 continuing. <b>Masters Degree student:</b> 10 awarded</li> <li>• Development of Syllabus for PhD. course work for PhD.(Fishery Science ) under Utkal University</li> </ul>
<b>Awards/ distinctions/ Overseas research</b>	<ol style="list-style-type: none"> <li>1. ICAR Award for Outstanding Interdisciplinary Team Research 2007-2008</li> <li>2. BOYSCAST Fellowship of DST to carry out research in the area of reproduction technology for one year (May 2009 to May 2010)</li> <li>3. CIFA Best Division Award 2012</li> <li>4. CIFA Best Division Award 2008</li> <li>5. Received CIFA Best Young Scientist Award for the Year 2007</li> <li>6. Best paper presentation award at the first International and third national conference on Biotechnology, Bioinformatics and Bioengineering held at Tirupati, AP during June 28-29, 2013. Organized by Society for Applied Biotechnology</li> <li>7. Special appreciation letter from Secretary DARE &amp; Director General</li> </ol>

	<p>ICAR for breakthrough in Early Breeding of Rohu during the year 2007 and 2008</p> <p>8. Special appreciation letter from Deputy Director General (FY) ICAR for the work on “Cloning of GTH and GnRH genes” during the year 2006-07</p> <p>9. Junior Research Fellowship during M. Sc. (Animal Physiology) course in 1995. 10. Qualified in ICAR Net and ASRB examination 1997</p>
<b>Areas of current research</b>	<ul style="list-style-type: none"> <li>❖ Molecular endocrinology</li> <li>❖ Reproductive biotechnology</li> <li>❖ Environmental Endocrinology</li> <li>❖ Nutrigenomics</li> </ul>
<b>Membership/position /Referee</b>	<ul style="list-style-type: none"> <li>➤ Life member of The Indian Science Congress Association, Kolkata, India</li> <li>➤ Life member of Society for Reproductive Biology and Comparative Endocrinology, Chennai, India</li> <li>➤ Life member of The Indian Society for Study of Animal Reproduction, Izatnagar, Bareilly, India</li> <li>➤ Life member of Association of Aquaculturist, Bhubaneswar, India</li> </ul>
<b>Publications</b>	
<b>List of Research publications</b>	
<b>(only Referred articles)</b>	<p>1. Avinash Pradhan, Madhusmita Nayak, Mrinal Samanta, Rudra Prasanna Panda, Suresh Chandra Rath, Shiba Shankar Giri, <b>Ashis Saha*</b>. 2018. Gonadotropin receptors of <i>Labeo rohita</i>: Cloning and characterization of full length cDNAs and their expression analysis during annual reproductive cycle. <i>General and Comparative Endocrinology</i>. 263: 21–31. (* Corresponding author).</p> <p>2. Madhusmita Nayak, Avinash Pradhan, Mrinal Samanta, Shiba Shankar Giri, <b>Ashis Saha*</b> 2018. Molecular characterization, tissue distribution and differential nutritional regulation of putative Elovl5 elongase in silver barb (<i>Puntius gonionotus</i>). <i>Comparative Biochemistry and Physiology, Part B</i>: 217, 27-39. (* Corresponding author).</p> <p>3. Madhusmita Nayak, <b>Ashis Saha*</b>, Avinash Pradhan, Mrinal Samanta, Tapan K. Mohanty, Shiba Shankar Giri .2018. Influence of dietary lipid levels on growth, nutrient utilization, tissue fatty acid composition and desaturase gene expression in silver barb (<i>Puntius gonionotus</i>) fingerlings. <i>Comparative Biochemistry and Physiology, Part B</i> 226:18–</p>

25. (\* Corresponding author).

4. Alok Kumar Giri, Mahismita Paichha, **Ashis Saha**, Surajit Das, Mrinal Samanta. 2018. Lrcasp9 shares similarity in structural motifs with human caspase-9 and is activated following bacterial infection and anti-viral vaccination. *3 Biotech* . 8:340.

5. Madhusmita Nayak, **Ashis Saha\***, Avinash Pradhan, Mrinal Samanta, Shiba Shankar Giri. 2017. Dietary fish oil replacement by linseed oil: Effect on growth, nutrient utilization, tissue fatty acid composition and desaturase gene expression in silver barb (*Puntius gonionotus*) fingerlings. *Comparative Biochemistry and Physiology, Part B* 205:1–12. (\* Corresponding author).

6. Avinash Pradhan, Suresh Chandra Rath and **Ashis Saha\***. 2017 . Molecular characterization and expression analysis of gonadotrophic  $\alpha$ -subunit hormone in rohu (*Labeo rohita*). *International Journal of Fisheries and Aquatic Studies* 2017; 5(1): 23-28. (\* Corresponding author) .

7. S.K. Sahoo, S. Ferosekhan\*, A. Saha, S.S. Giri and M. Paramanik. Embryonic and larval development of an endangered catfish, *Horabagrus brachysoma*. *Indian J. Anim. Res.* 51(1);15-20.

8. **Ashis Saha\***, Avinash Pradhan, Sushmita Sengupta, Madhusmita Nayak, Mrinal Samanta, Lakshman Sahoo, Shiba Shankar Giri. 2016. Molecular characterization of two *kiss* genes and their expression in rohu (*Labeo rohita*) during annual reproductive cycle. *Comparative Biochemistry and Physiology, Part B*. 191:135-145.

9. Ferosekhan S, Sahoo SK, Giri SS, **Saha A** and Paramanik M. 2016. Embryonic and Larval Development of Yellow Tail Catfish, *Pangasius pangasius*. *J Aquac Res Development* .6:343.

10. **Madhusmita Nayak**, Ashis Saha, Shiba Shankar Giri (2015). Fatty acid profile of fillet and liver and proximate composition of *Puntius gonionotus* and *Puntius sarana*. *Indian J. Anim. Nutr.* 32 (4): 433-438.

11. Chinmayee Mohapatra, Swagat Patra, Rudra Prasanna Panda, Ramya Mohanta, **Ashis Saha**, Jitendra Nath Saha, Kanta Das Mahapatra, Pallipuram Jayashankar and Hirak Kumar Barman. 2014. Gene structure and identification of minimal promoter of Pou2 expressed in spermatogonial cells of rohu carp, *Labeo rohita*. *Molecular Biology Reports*. 41: 4123-4132.

12. Biplab Sarkar, Surya Prakash Netam, Arabinda Mahanty, **Ashis Saha**, Ranadhir Bosu, K. K. Krishnani. 2014. Toxicity evaluation of chemically and plant derived silver nanoparticles on zebrafish (*Danio rerio*). *Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.* 84(4): 885–892.

13. Biplab Sarkar, Arabinda Mahanty, **Ashis Saha**, Artatrana Pal, Partha

	<p>Bandyapadhyay, Sampad Kumar Sarkar, Subhendu Adhikari and S. Ayyappan.2014. Impact of cypermethrin and carbofuran on the ovarian cycle of the Indian major carp, <i>Labeo rohita</i> (Hamilton). Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci . 84(4): 989-996.</p> <p>14. Rakesh Kumar Majhi, Ashutosh Kumar, Manoj Yadav, Nirlipta Swain, Shikha Kumari , <b>Ashis Saha</b> , Avinash Pradhan , Luna Goswami , Somdatta Saha, Luna Samanta , Apratim Maity , Tapas Kumar Nayak , Subhasis Chattopadhyay , Chitra Rajakuberan , Abhishek Kumar, and Chandan Goswami.2013. Thermosensitive ion channel TRPV1 is endogenously expressed in the sperm of a fresh water teleost fish (<i>Labeo rohita</i>) and regulates sperm motility. Channels(Austin). 7(6): 483-492.</p> <p>15. S. K. Sarkar, <b>A. Saha</b>, S. Dasgupta, S. Nandi, D. K. Verma, P. Routray, C. Devaraj, J. Mohanty, N. Sarangi, A. E. Eknath and S. Ayyappan Photothermal manipulation of reproduction in Indian major carp: a step forward for off-season breeding and seed production. Current Science, 99(7): 960-964.</p> <p>16. S. K. Sahoo, S.S.Giri, A.Saha, S.Chandra, A.K.sahu &amp; N.Sarangi.2007. Embryonic development of the spiny eel, <i>Mastacembelus aculeatus</i>(Bloch,1786). Indian J.Fish., 54(3);333-337.</p> <p>17.D.S.Arathy, Saha Ashis, G.T. Sharma, A.C.Majumdar and M.S.Chauhan.2004.Effect of specific gravity of cultured medium on in vitro embryo development in buffalo. Reproduction, Fertility and Development. 16(1-2):253 .</p> <p>18. Mahendra Singh, J.R.khan and <b>Ashis Saha</b>.2001. Circulatory levels of immunoglobulin in bromocryptine administered murreh buffaloes during early lactation. Indian J.Anim.Res.35 (1): 77-78.</p> <p>19.<b>A.Saha</b> and M.Singh.1998.Plasma hormones, blood metabolites, milk yield and composition in early lactation of buffaloes treated with bromocryptine.AJAS.11 (4): 368-374.</p> <p>20.Mahendra Singh, <b>Ashis Saha</b> and J.R.Khan. 1998. Metabolic hormones profile of bromocryptine treated buffaloes during early lactation.Inter.J.Anim.sci.13: 169-172.</p>
<b>Patent</b>	<p>Patent Title: “A method and an apparatus for developing gonadal maturity in carp”. Indian Patent number:275820.</p>
<b>Book Chapter</b>	<p><b>Ashis Saha</b>, S.C.Rath , S.S.Giri.2014. Kisspeptin in fish. In: Text book of Advances in Biochemistry and Biotechnology Vol.2 (Eds Biplab Sarkar and C. Chakraborty).</p> <p><b>Ashis Saha</b>, S.C.Rath.2015. Indian major carps are no longer seasonal breeder. In: International Training Manual on Fish breeding Technology.</p>

	<p><b>Ashis Saha.</b>2015 Application of nutrigenomics in aquaculture. In: Training Manual of Summer school on “Advance tools for genetic improvement of aquaculture species: an integrated approach”.</p> <p><b>Ashis Saha.</b>2013. Hormonal regulation of digestive function in fish. In: Training Manual of Summer school on “Sustainable fish feeds and nutraceuticals to grow health promoting fish”.</p> <p><b>Ashis Saha, S.C.Rath.</b>2012.Off-season breeding in Indian major carps. In : Quality fish seed production through brood fish management in SARC countries (Eds K. Dasmahaptra, P.Routray, N.K.Barik, P.Jayasankar)</p>
<p><b>NCBI GenBank Data submission</b></p>	<p><b>Saha,A.,</b> Pattanaik S., Pradhan,A and Nayak,M.2017.<i>Labeo rohita</i> Kiss1receptor (Kiss1r) mRNA, partial CDS . (GenBank Acc No# MF663196)</p> <p>Khalkho,N., Pradhan,A., Nayak,M. and <b>Saha,A.</b>2017. <i>Labeo rohita</i> tachykinin 3 (tac3) mRNA, partial cds. (GenBank Acc No# KY751704).</p> <p>Nayak,M., <b>Saha,A.</b>, Pradhan,A. and Giri,S.S. 2017 . <i>Barbonymus gonionotus</i> fatty acid elongase (ELO) mRNA, partial cds. (GenBank Acc No# KY751703)</p> <p><b>Saha,A.,</b> Pradhan,A., Parija,S.R., Nayak,M. and Giri,S.S.2016. Rohu gonadotropin alpha subunit mRNA, complete cds (GenBank Acc No# KU743471)</p> <p><b>Saha,A.,</b> Baral,S., Sengupta,S., Pradhan,A. and Giri,S.S.2014. <i>Catla catla</i> kisspeptin 2 (kiss2) mRNA, partial cds (Acc No# KM212969).</p> <p><b>Saha,A.,</b> Sengupta,S., Baral,S., Pradhan,A. and Giri,S.S. 2014. <i>Catla catla</i> kisspeptin 1 (kiss1) mRNA, partial cds. (Acc No# KM212970).</p> <p><b>Saha,A.,</b> Sengupta,S., Pradhan,A., Sahoo,L. and Giri,S.S.2014.<i>Labeo rohita</i> type II gonadotropinreleasing hormone (cGnRH-II) mRNA, partial cds (Acc No#KM232907).</p> <p><b>Saha,A.,</b> Sengupta,S., Pradhan,A., Sahoo,L. and Giri,S.S.2014. <i>Labeo rohita</i> salmon-type gonadotropin-releasing hormone (sGnRH) mRNA, complete cds. (Acc No#KM232908).</p> <p><b>Saha,A.,</b> Sengupta,S., Pradhan,A., Nayak M., Sahoo ,L. and GIRI,S.S. 2013. <i>Labeo rohita</i> kisspeptin1 (kiss1) mRNA, partial cds (GenBank Acc No#KF737179).</p> <p><b>Saha,A.,</b> Sengupta,S., Pradhan,A., Nayak M. and Giri,S.S. 2013. Molecular characterisation of Kisspeptin 2 of rohu, <i>Labeo rohita</i> (GenBank Acc No #KF695115 ).</p> <p>Sankar,K., <b>Saha,A.</b> and Pradhan,A.2013. <i>Labeo rohita</i> clone AS-actv activin beta B subunit precursor, mRNA, complete cds. (GenBank Acc No#KF709697).</p> <p><b>Saha,A.,</b> Pradhan,A., Pattanaik,S.S. and Giri,S.S. 2012. Molecular characterization of Rohu Luteinizing Hormone Receptor(LHR). (GenBank Acc No #JX678284).</p>

	<p><b>Saha,A.</b>, Pradhan,A. and Giri,S.S.2012. Molecular characterisation of follicle stimulating hormone receptor of rohu, <i>Labeo rohita</i>.(GenBank Acc No #JX678220).</p> <p>Nayak,M., <b>Saha,A.</b>, Pradhan,A. and Giri,S.S. 2012. Molecular characterization and expression analysis of delta-6 fatty acyl desaturase gene in <i>Puntius gonionotus</i> . (Acc No#JX678221).</p> <p>Nandi,S., Dasgupta,S., Sarkar,S.K., <b>Saha,A.</b>, Nayak,P.K., Das,P., Barat,A., Sahoo,D.R. and Sarangi,N. <i>Labeo rohita</i> gonadotropin subunit beta-2 precursor (GTHII) mRNA, partial cds. Acc. No # EF494676.</p> <p>Nandi,S., Dasgupta,S., Sarkar,S.K., <b>Saha,A.</b>, Nayak,P.K., Das,P., Barat,A., Sahoo,D.R. and Sarangi,N. <i>Labeo rohita</i> gonadotropin subunit beta-1 precursor (GTHI) mRNA, partial cds. Acc. No # EF494675.</p>
<p><b>Newspaper article:</b></p>	<ul style="list-style-type: none"> <li>• Now, Rohu can be bred round the year - The Pioneer, Dec 7, 2013</li> <li>• Rohu machera safala praganana- Sambad (Oriya Daily),Dec6,2013</li> <li>• Sabu ruture rohu machera praganana sambhaba- Samaj (Oriya Daily),Dec8, 2013</li> <li>• Scientists breed rohu off- season. The New Indian Express, Bhubaneswar, January 30,2008</li> <li>• Major breakthrough in the field of aquaculture. The Statesman, Bhubaneswar, January 26, 2008</li> <li>• CIFA achieves breakthrough in off-season breeding of carp. The Pioneer, Bhubaneswar, January 26, 2008</li> <li>• Pariksha safal shitaao janma nebe rohu . Ananda bazaar patrika, Kolkata, 2<sup>nd</sup> February2008</li> <li>• Dharitri, Bhubaneswar, February 13, 2008</li> </ul>