

## **Dr. ANNU KUMARI**

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### **RESEARCH INTERESTS**

Biochemical Adaptation, Genetics, Fisheries and Molecular Biology

### **SUMMARY OF QUALIFICATIONS**

- Ph.D with 6 years of research experience from North Eastern Hill University, Shillong.
- 9 month experience in teaching BSc and MSc Zoology.
- Bachelors Dissertation Guideship: 2023 (5 students).
- Published research papers/book-chapter in national and international journals
- Presented research work in a various National/ International Conferences and seminars

### **PUBLICATIONS**

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#### **A. Research Journals**

- **Kumari A.**, Koner D., Lanong A., Khongmawloh E., Snaitang R., Saha N (2022). Changes in the expression of certain osmosensitive channel and transporter genes in primary hepatocytes of air-breathing catfish, *Clarias magur*: A strategy to adapt under osmotic stress. *Aquaculture*, 562: 738756 (Elsevier Publication, **IF: 5.13**)
- Koner D., Banerjee B., **Kumari A.**, Lanong A., Snaitang R., Saha N. (2021).Molecular characterization of superoxide dismutase and catalase genes, and the induction of antioxidant genes under the zinc oxide nanoparticle-induced oxidative stress in air-breathing magur catfish (*Clarias magur*). *Fish Physiology and Biochemistry*, 47: 1909-1932. (Springer Publication, **IF: 3.01**)

#### **B. Book Chapters**

- **Kumari, A., & Saha, N. (2023).** Molecular Characterization and Expression of

Na<sup>+</sup>-K<sup>+</sup>-ATPase Encoding Genes in the Gills of Magur Catfish (*Clarias magur*) Induced by Hyper-osmotic Stress. In Fisheries: Unraveling Heritage To Achieve Modern Goals. (pp. 1-22). ISBN: 978-93-56512-00-9.

- Sharma, R., Snaitang, R., & **Kumari, A.** Mammalian Target of Rapamycin (mTOR): A potential target for cancer therapy. In Emerging Trends in Life Science. ISBN: 9789390706082.

### C. Number of sequences published in NCBI: 17

- **MH648619 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* Sodium/potassium-transporting ATPase subunit alpha-1 (*atp1a1*) mRNA, complete cds.
- **MH681996 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* urea transporter 1 (*slc14a1*) mRNA, complete cds.
- **MH681995 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* sodium and chloride-dependent taurine transporter (*slc6a6*) mRNA, partial cds.
- **MH648618 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* sodium/potassium-transporting ATPase subunit beta-1 (*atp1b1*) mRNA, complete cds.
- **MH681998 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* aquaporin 1 (*aqp1*) mRNA, complete cds.
- **MH681999 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* aquaporin 3 (*aqp3*) mRNA, complete cds.
- **MH682000 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* aquaporin 4 (*aqp4*) mRNA, complete cds.
- **MH607601 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* aquaporin 7 (*aqp7*) mRNA, complete cds
- **MH52125 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* aquaporin 8 (*aqp8*) mRNA, partial cds.
- **MH492320 Kumari,A.,** Banerjee,B. and Saha,N. *Clarias magur* aquaporin 11 (*aqp11*) mRNA, complete cds.
- **MH492321 Kumari,A.,** Banerjee,B. and Saha,N. *Clarias magur* aquaporin 12 (*aqp12*) mRNA, partial cds.
- **MH764353 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* GABA transporter 2 (*slc6a13*) mRNA, complete cds.
- **MH648620 Kumari,A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* sodium/potassium-transporting ATPase subunit beta-3 (*atp1b3*) mRNA, partial cds.
- **MH682001 Kumari, A.,** Banerjee,B., Koner,D. and Saha,N. *Clarias magur* urea transporter 2 (*slc14a2*) mRNA, partial cds.
- **MW773840 Kumari,A.,** Koner,D., Lalong,A., Khongmawloh,E., Snaitang,R., Sharma,R. and Saha,N. *Clarias magur* claudin-1 (*cldn1*) mRNA, complete cds.
- **MW821487 Kumari,A.,** Koner,D., Lalong,A., Khongmawloh,E., Snaitang,R. and Saha,N. *Clarias magur* claudin-4 (*cldn4*) mRNA, complete cds.
- **MW752164 Lalong,A., Kumari,A.,** Khongmawloh,E., Snaitang,R. Koner,D. and Saha,N. *Clarias magur* catalase (cat) mRNA, complete cds.

## **AWARDS-**

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- **Certificate of Appreciation** awarded by St. Edmund's College, Shillong in recognition and appreciation for securing **First Class Fifth rank in Zoology Honours Degree Examination, 2014** under North Eastern Hill University, Shillong.
- **“Rajendra Kumar Sunheri Devi Jain Charitable Endowment Award” (Book Grant)**, for the year 2014 for securing a **high percentage of marks in B.Sc. Honours (Zoology)** among the candidates in the year 2014. By the North Eastern Hill University, Shillong.
- **Awarded for Third position in the M.Sc. (Zoology) Seminar** held at the Department of Zoology, North Eastern Hill University during the academic year 2015-2016.
- Certificate of rank holder achieved under North Eastern Hill University, Shillong in recognition for securing **First Class Fifth rank in M. Sc. (Zoology)**, 2016.
- Won first prize for possession of best **moral ethics** in the year 2010 by St. Mary's College-Shillong.
- Felicitated with certificate for scoring **high percentage of marks in class 12 (Science)** among students in the year 2011 by St. Mary's College-Shillong.
- Received prize for securing **First place in the Environment Quiz Competition** held on the occasion of World Environment Day at Govt. Girls. Higher. Secondary school, Shillong, in the year 2008 by St. Mary's College-Shillong.
- Awarded with **Excellence certificate** during computer awareness programme in St. Mary's college in the year 2009
- **Certificate of Appreciation** awarded by Govt. Girls. Higher Secondary school, Shillong in the year 2006 for securing highest marks in mathematics.
- **Certificate of Appreciation** awarded by Govt. Girls. Higher Secondary school, Shillong in the year 2009 for securing letter marks in Science, Social science and Health Education.

## **CONFERENCES/ SEMINARS/ SYMPOSIUMS/ WEBINARS ATTENDED AND PAPERS PRESENTED**

- Presented **orally a paper** entitled “Effects of anisotonicity on the expression of different osmosensitive transporters/ channels in primary hepatocytes of air-breathing catfish, *Clarias magur*” in the **“3rd International Symposium on Genomics in Aquaculture”** organized by the **ICAR-Central Institute of Freshwater Aquaculture in collaboration with Association of Aquaculturists. From 21th-23th January 2020 at Bhubaneswar, India.**
- Presented **orally a paper** entitled “The expression of different osmosensitive transporters/ channels under osmotic stress in primary hepatocytes of air-breathing catfish, *Clarias magur*” in the **National Symposium on Recent Trends in Zoological Sciences** organized by the **Department of Zoology, North-Eastern Hill University. From 28th-29th February 2020 at Shillong – 793022.**
- Presented a **poster** entitled “Anisotonicity induced osmoadaptational strategies to defend against osmotic stress in primary hepatocytes of air-breathing catfish, *Clarias magur*” in the

**National seminars on Life & Life processes: Interdisciplinary Approach for Sustainable Development” organized by the Department of Zoology, Goa University. From: 19th-21st July, 2021 through virtual mode.**

### **CONFERENCES/ SEMINARS/ SYMPOSIUMS/ WEBINARS ATTENDED**

- Participated in **National Conference** entitled "Technological Empowerment of Women" organized by **The National Academy of Sciences, India (NASI) at Vigyan Bhavan, New Delhi from March 8th – 9th, 2018.**
- Participated in **National Conference** entitled "Recent Trends in Zoological Research in North-East India" jointly organized by the **Department of Zoology, North-Eastern Hill University, Shillong – 793022 and the Zoological Society (Kolkata) from April 19th – 20th, 2018.**
- Participated in **National Life Science Entrepreneurship Awareness Programme** organized by **School of Life Sciences, North Eastern Hill University, Shillong on 8th March 2019.**
- Participated in **International webinar** entitled "Breakthrough in Cell Science" organized by the **Department of Zoology, Midnapore College, West Bengal, India on 9th August, 2020.**
- Participated in **National webinar** entitled "Scorpions: The Incredible Arachnids" organized by the **Department of Zoology, Assam Don Bosco University on the 8th August, 2020.**
- Participated in **National webinar** entitled "Dynamics of Chytridiomycosis, a panzootic disease causing Amphibian declines" organized by the **Department of Zoology, Assam Don Bosco University on 16th August, 2020.**
- Participated in **National webinar** entitled "Immunotherapy approaches in cancer drug" discovery organized by **Mizoram University Aizawl, India on 5th August 2020**
- Participated in **National webinar** entitled "Metagenomics for climate Resilient Agriculture" organised by **Centre for Climate change Studies, Sathyabama Institute of Science and Technology , Chennai on 15th August, 2020**
- Participated in **International Webinar** entitled "COVID-19 Pandemic- Impact on Sustainable Fishery Sector and Global Trade (CPISFSG-2020)" organised by **Department of Marine Biology, Vikrama Simhapuri University, Nellore on 17th August 2020.**
- Participated in **International webinar** entitled “Material science and importance of developing composite materials” organized by the **Department of Science and Humanities, Sreenivasa Institute of Technology and Management Studies , Chittoor, AP, India on 21st August 2020.**

### **TRAINING PROGRAMMES ATTENDED**

- Participated in the "**One-day Training Workshop on Leica Confocal Laser Scanning Microscope**" jointly organized by the **School of Life Sciences, North Eastern Hill University, Shillong & Leica Microsystems, India held on 18<sup>th</sup> April 2019.**
- Participated in a three day workshop entitled “**Publishing Ethics and Research Methodology**” organized by **Dr. B.R. Ambedkar Central Library, Jawaharlal Nehru University, New Delhi from Aug 12th - 14th, 2020 through virtual mode.**