

## Dr. Ashutosh Ranjan

Telephone: +91-9026332070  
Email- ashutoshranjan.bhu@gmail.com



### CURRENT AFFILIATION

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Assistant Professor at Department of Zoology, University of Lucknow.

### Post-Doctoral Research

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2020-2022 Postdoctoral Fellow (SERB-NPDF) at Biological Sciences and Bioengineering, Indian Institute of Technology, Kanpur, India

### EDUCATION

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2019 Ph.D. Zoology, Banaras Hindu University, India  
  
Thesis title: *Role of nesfatin-1 in regulation of testicular activities during puberty, reproductively active and type-2 diabetic condition in mice.*  
  
*Supervisor: Prof. Amitabh Krishna*

2013 M.Sc. Zoology (7.33/10 CGPA) (*Specialization-Mammalian Reproductive Physiology*), Banaras Hindu University, India

2011 B.Sc. Zoology (8.23/10 CGPA), Banaras Hindu University, India

2007 Intermediate (Passed with 74%), St. John's School, Jaunpur.

2005 High School (Passed with 70%), St. John's School, Jaunpur.

### PROFESSIONAL CERTIFICATIONS

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2019-present Job Role of Yoga Trainer (QP No. BWS/Q2203) Conforming to National Skills Qualification Framework Level-5.

### TECHNICAL SKILLS

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- 1. Molecular and Cell biology:** Handling and maintenance of bacterial culture, mammalian cell culture, insect cell culture, and liposome mediated transfection, Slide and spot sample preparation.
- 2. Genetics:** Agarose gel electrophoresis, Gradient PCR, Cloning, Site-directed mutagenesis.

3. **Biochemistry:** Native and SDS PAGE, UV-Vis Spectrophotometry, Protein purification, Affinity chromatography, Size-exclusion chromatography, Immuno-precipitation, Immunoblotting, BRET/FRET and other luminescence based assays.
4. **Cell Imaging:** Bright field, Fluorescence and live cell imaging, confocal microscopy.
5. Semen analysis, Histology, Immunohistochemistry, Immunofluorescence.
6. **Animal Handling and dissection:** Mice, Rat, Fish, and Drosophila, Vasectomy, Hysterectomy, Ovariectomy. Cryptorchidectomy, Pancreactomy and isolation of endocrine glands like Pituitary and Pineal of mice and rat.
7. **Computational skills:** MS office package, SPSS, Image J, Mendeley, GraphPad, Bio render, Pymol, Image lab, Image J.

## **WORKSHOP AND TRAINING**

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- 2019      Participated in “*Workshop and Hands-on-Training for Animal Behaviour Techniques*”, Interdisciplinary School of Life Sciences, Banaras Hindu University, Varanasi, India, January 30-February 1.
- 2018      Participated in workshop on “*Awareness and sensitization towards use of Animals in Teaching and Research as per CPCSEA and UGC Guidelines*”, Banaras Hindu University, Varanasi, India, April 16.
- Participated in “*Hands-on workshop on Real-Time PCR*”, Banaras Hindu University, Varanasi, India, July 17-18.
- 2017      Participated in workshop on “*Maternal and Newborn Care: Issues and Challenges*”, Banaras Hindu University, Varanasi, India, March 1-7.
- Participated course in “*Cleveland Clinic Advanced Certificate Course in Diabetes 2017*”. New Delhi, India, August 26-27.
- 2016      Participated in workshop on “*Latex and other Open Source Software*”, DST Centre for Interdisciplinary Mathematical Sciences, Banaras Hindu University, Varanasi, India, January 4-9.
- 2015      Participated in training course on “*Application of Research Techniques in Reproductive Biomedicine*”, National Institute of Health and Family Welfare, New Delhi, India, September 7-18.

## **AWARDS AND HONORS**

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- 2020      Awarded National Postdoctoral Fellowship (SERB-NPDF).
- 2019      3<sup>rd</sup> prize poster presentation, National Conference on Frontier in Health Sciences, Varanasi, India.

Youth delegate to China from 2<sup>nd</sup> July to 9<sup>th</sup> July under bilateral Youth Exchange Programme organized by Ministry of Youth Affairs and Sports, Government of India.

- 2017 1<sup>st</sup> prize oral presentation, Functional Biology and Molecular Interaction (FBMI-2017), Lucknow, India.
- 2015 Qualified “Graduate Aptitude Test in Engineering (GATE)” organized by IIT Kanpur.
- 2014 Qualified “Graduate Aptitude Test in Engineering (GATE)” organized by IIT Kharagpur.
- 2014 Awarded UGC-CAS-JRF/SRF Fellowship during Ph.D.

## **PUBLICATIONS**

### **Peer-Reviewed Journal Articles/Book chapters/Review articles**

- 2022 M Baidya, M Chaturvedi, H Dwivedi-Agnihotri, **A Ranjan**, D Devost, ...*Allosteric modulation of GPCR-induced  $\beta$ -arrestin trafficking and signaling by a synthetic intrabody*. **Nature Communications** (Accepted)
- 2022 Saha S, **Ranjan A**, Godara M and Shukla AK. *In-cellulo chemical cross-linking to visualize protein-protein interactions*. **Methods in Cell Biology** (in press).
- 2021 Pandey, S., Kumari, P., Baidya, M., Cao, Kise, Y., Agnihotri, H D, Banerjee, R., Li, XX., Cui, CS., Lee, JD., Kawakami, K., Maharana, J., **Ranjan, A.**, Chaturvedi, M., Jhingan, GD., Laporte, SA., Woodruff, TM., Inoue, A., and Shukla, AK. *Intrinsic bias at non-canonical,  $\beta$ -arrestin-coupled seven transmembrane receptors*. **Molecular Cell**, 81, 1–17.
- 2021 Choubey, M., **Ranjan, A.**, Krishna, A. *Adiponectin/AdipoRs signaling as a key player in testicular aging and associated-metabolic diseases*. **Vitamins and Hormones**, 13 Feb 2021, 115:611-634.
- 2020 **Ranjan, A.**, Choubey, M., Yada, T., Krishna, A. *Nesfatin-1 ameliorates type-2 diabetes-associated reproductive dysfunction in male mice*. **J Endocrinol Invest.** 43 (4), 515-528.
- 2020 Choubey, M., **Ranjan, A.**, Bora, PS., Krishna, A. *Protective role of adiponectin against testicular impairment in high-fat diet/streptozotocin-induced type 2 diabetic mice*. **Biochimie.** 168:41-52.
- 2019 **Ranjan, A.**, Choubey, M., Yada, T., Krishna, A. *Immunohistochemical localization and possible functions of nesfatin-1 in the testis of mice during pubertal development and sexual maturation*. **J. Mol. Hist.** 50, 533–549.
- Ranjan, A.**, Choubey, M., Yada, T., Krishna, A. *Direct effects of neuropeptide nesfatin-1 on testicular spermatogenesis and steroidogenesis of the adult mice*. **Gen. Comp. Endocrinol.** 271, 49–60.

Choubey, M., **Ranjan, A.**, Bora, P.S., Baltazar, F., Martin, L.J., Krishna, A. *Role of adiponectin as a modulator of testicular function during aging in mice. Biochim. Biophys. Acta - Mol. Basis Dis.* 1865, 413-427.

Choubey, M., **Ranjan, A.**, Bora, P.S., Baltazar, F., Krishna, A. *Direct actions of adiponectin on changes in reproductive, metabolic and anti-oxidative enzymes status in the testis of adult mice. Gen. Comp. Endocrinol.* 279, 1-11.

**Ranjan, A.** *Type-1 diabetes mellitus and its relation with impairment of female fertility. Acta Scientific and Nutritional Health.* 3(5).

2018 **Ranjan, A.**, Singh, VK., Lal, B. *Existence of NOS/NO system in testis and its relation with reproductive activity in the common carp, Cyprinus carpio. J. Sci, Res.* 62, 72-84.

2017 **Ranjan, A.** *Adipokines as a modulator of reproductive function. J. Sci. Res.* 61, 131-140.

## CONFERENCE PROCEEDINGS

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2020 **Ashutosh Ranjan & Amitabh Krishna.** *Nesfatin-1 treatment recuperate the declined spermatogenesis and steroidogenesis as well as altered oxidative stress in high-fat diet/streptozotocin induced type-2 diabetic mice. International Conference on Women's Reproductive Health: A step towards Improving Quality of Life. Mumbai, India, February 20-23.*

2019 **Ashutosh Ranjan & Amitabh Krishna.** *Exogenous treatment of nesfatin-1 ameliorates perturb testicular spermatogenesis, steroidogenesis and oxidative imbalance in type -2 diabetic conditions in male mice. National Conference on Frontier in Health Sciences, Varanasi, India, March 11-12.*

2018 **Ashutosh Ranjan & Amitabh Krishna.** *Existence of NOS / NO system in testis and its relation with reproductive activity in the common carp, Cyprinus carpio. 88<sup>th</sup> Annual Session of the National Academic of Sciences, India, Chitrakoot, India, December 6-8.*

**Ashutosh Ranjan & Amitabh Krishna.** *Recuperative effect of nesfatin-1 in the testicular physiology and improved fertility during type 2-diabetes condition in mice. 2<sup>nd</sup> Congress of Asian Society for Fertility Preservation and 5<sup>th</sup> Annual Conference of Fertility Preservation Society (India), New Delhi, India, September 22-23.*

**Ashutosh Ranjan & Amitabh Krishna.** *A possible role of nesfatin-1 on spermatogenesis and steroidogenesis in pre-pubertal mice. 36<sup>th</sup> Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Goa, India, January 20-22.*

2017 **Ashutosh Ranjan & Amitabh Krishna.** *Effect of nesfatin-1 on testicular activities and its role in balancing oxidative status in adult mice: an in-vitro approach. 27<sup>th</sup> Annual Meeting of the Indian Society for the Study of Reproduction and Fertility, January 23-25.*

**Ashutosh Ranjan & Amitabh Krishna.** *Nesfatin-1 emerges as a new paradigm in regulation of steroidogenesis and spermatogenesis in adult mice.* Functional Biology and Molecular Interaction (FBMI-2017), Lucknow, India, December 20-22.

2016 **Ashutosh Ranjan & Amitabh Krishna.** Direct effect of Nesfatin-1 on glucose homeostasis in testis of mice. 34<sup>th</sup> Annual Meeting of the Society for Reproductive Biology and Comparative Endocrinology, Varanasi, India, February 12-14.

2015 **Ashutosh Ranjan & Amitabh Krishna.** *Age dependent expression of nesfatin-1 and its role in Glucose metabolism.* Indian Society for Comparative Endocrinology, Santiniketan, India, October 1-3.