SOUVIK DEY

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Lab website address: <u>http://deyresearchlab.in/</u> Linked In: <u>https://www.linkedin.com/in/souvik-dey-ph-d-7737344a/</u> Google Scholar: <u>https://scholar.google.com/citations?hl=en&user=07vN6UoAAAAJ</u> ORCID ID: <u>https://orcid.org/0000-0003-1799-5270</u> Web of Science: https://www.webofscience.com/wos/author/record/AAB-2252-2021



CAREER GOAL

To work independently and in collaboration in order to utilize my abilities, experience and technical skills in the area of life science research and teaching with a creative and translational approach.

RESEARCH INTERESTS

My current research interest lies in the area of reproductive biomedicine and on better understanding of the biochemistry of the gamete functions in mammalian systems and exploration of its translational aspects for the treatment of infertility issues in humans.

During my post-doctoral research tenure, I worked on the biochemistry of mammalian sperm function, specifically delineation of the interrelation between GSK3 and Calcineurin in the regulation of sperm motility and fertility. Earlier I worked on the elucidation of signal transduction mechanism regulating sperm Glycogen synthase kinase 3 (GSK3) activities under influence of the cAMP-PKA axis. It also included the identification of substrates of Protein kinase A and GSK3 using the *Chemical-genetics* and *Proteomics* approach. During my doctoral research work, I was involved in the purification, characterization and deciphering signal transduction mechanism of a glycoprotein from mammalian blood serum.

My future interest as an independent researcher is to study of biopharmaceuticals with special emphasis on their use in pathophysiological profiling and regulation of cell signaling mechanisms involved in human diseases.

EDUCATION	
Ph.D	November 2015. Department of Life Science & Biotechnology, Jadavpur University, Kolkata, WB, India.
M.Sc.	August 2008. Department of Microbiology, University of Kalyani, Kalyani, WB, India
B.Sc.	August 2006. Department of Physiology, Vidyasagar College, University of Calcutta, Kolkata, WB, India.

RESEARCH & TEACHING EXPERIENCE

Assistant Professor (November 2021 – present):

Working as a DBT-Ramalingaswami Fellow (Assistant Professor grade) on *molecular and biochemical aspects of male infertility* in the Manipal Center for Biotherapeutics Research, Manipal Academy of Higher Education (MAHE), Manipal, KA, India.

- Setting up of independent facilities for 'Dey Research Lab'.
- Exploring the interrelation between GSK3 and m6A-RNA demethylases, FTO & ALKBH5 in the regulation of mammalian spermatogenesis and fertility.
- Development of reversible male contraceptives targeting PP2B and GSK3a.

Assistant Professor (August 2020 – October 2021):

Worked as an Assistant Professor (DBT-Ramalingaswami Fellow) on *molecular and biochemical aspects of male infertility* in the Department of Pharmaceutical Technology, Jadavpur University, Kolkata, WB, India.

• Setting up of independent facilities for my 'Sperm Biology Lab'.

Teaching: Biology classes for B. Pharm. Students: Pathophysiology, Remedial Biology.

Postdoctoral (December 2015 – June 2020):

Worked as a Post-doctoral Research Associate on *Reproductive physiology* in the Department of Biological Sciences, Kent State University, Ohio, USA.

- Delineating the interrelation between GSK3 and Calcineurin in regulation of mammalian sperm motility and fertility. Based on my preliminary work we got one RO3 grant in 2018 entitled "Regulation of sperm metabolism and fertility by calcineurin and GSK3" (ref: R03HD096176-01).
- Elucidation of signal transduction mechanism regulating mammalian sperm GSK3 activity under influence of cAMP-PKA axis.
- Investigation of binding partners of a sperm phosphokinase, viz. GSK3 using chemicalgenetics based proteomics approach and conventional biochemical ways like pull-down and coimmunoprecipitation techniques using wild type and knock-out mice.
- Identification of the isoform-specific functions of GSK3 α enzyme in relation to fertilization potential of mouse spermatozoa.
- Development of reversible male contraceptives targeting PP2B (International patent Application No.: PCT/US20/36899; Confirmation No.: 9132).

Additional responsibilities:

- Guiding and planning of research work for undergraduate and graduate students in the lab.
- Managing everyday lab work and maintaining track on research supplies.
- Based on our data obtained so far we are planning to submit three NIH grants by November, this year: one a RO1, an exploratory R21/RO3, and a R15 in collaboration with Dr. S. Abeysirigunawardena, Department of Chemistry & Biochemistry, Kent State University.

Doctoral (November 2010 – November 2015):

Did doctoral research work in *Reproductive physiology* under the supervision of Prof. Gopal C. Majumder and Dr. Debdas Bhattacharyya in the Division of Cryobiology, Centre for Rural & Cryogenic Technologies (CRCT), Jadavpur University, Kolkata.

- Purification of a sperm motility regulatory glycoprotein from mammalian blood serum and its proteomic characterization, including its peptide analysis.
- Biochemical investigation for detection, expression, and physiological significance of the receptor of the aforestated motility regulatory glycoprotein in goat spermatozoa.
- Elucidation of the intracellular signaling pathway of the forward motility stimulating factor in the caprine caudal sperm model with special reference to cAMP and Ca²⁺ signaling.
- *In vivo* and *in vitro* study on the hormonal regulation of secretion of the above-stated motility activating glycoprotein
- Study on the occurrence of the previously mentioned glycoprotein factor in the human and ruminant species and determination of its physiological and clinical significance
- Investigation of the role of an epididymal plasma-derived protein in the regulation of the mammalian capacitation process.

Pre-doctoral (January 2009 – November 2010):

Experience of research as a Junior Research Fellow in the Department of Immunoregulation & Immunodiagnostics (IRID) at Chittaranjan National Cancer Institute (CNCI), Kolkata, WB, India.

- Study on the fundamental immunological parameters leading to cancerous growth
- *In vivo* study of mouse tumor models and *in vitro* culture of different mammalian cancer cell lines.
- Investigation of the prophylactic and therapeutic role of certain phytochemicals on the development and control of certain tumors in mice and cell culture models.

<u>M.Sc. level</u>:

2007 (May- June):

Hands on experience of working in NACO recommended HIV-AIDS laboratory in National Institute of Cholera and Enteric Diseases (NICED), Kolkata, as a summer training fellow on the topic, '*Immunoassays for Detection of HIV Antigen/Antibody*'.

PATENT APPLICATION

Vijayaraghavan Srinivasan, **Dey Souvik**, Eisa Alaa. Compositions targeting sperm calcineurin. Application Number: 62859225; EFS ID: 36245446. Application received April 24, 2019. International Patent Details: Received June 10, 2020. International Application Number: PCT/US20/36899; Confirmation No.: 9132.

<u>Souvik Dey.</u> Neha Choudhari, A Method and a Kit for Detection and Measurement of RNA Modification; Indian Patent Application No.202441095672 dated: 04-12-2024

RESEARCH PUBLICATIONS AND COMMUNICATION

- 1. Kabi, M., Khamamkar, A., Kyei-Baffour, K., Weïwer, M., Vijayaraghavan, S*., & Dey, **Souvik***. (2025). A non-hormonal reversible contraceptive targeting GSK3a, a protein kinase, essential for epididymal maturation. Andrology. 2025.sperm https://doi.org/10.1111/andr.13838. PMID: *Co-39748754. (Impact factor: **3.2**). corresponding authors.
- <u>Dey, Souvik</u>^{*,#}, Nofal, W., Brothag, C., Kabi, M., Khamamkar, A., Choudhari, N., & Vijayaraghavan, S. (2025). PP1y1 is unable to substitute for the mammal-specific PP1y2 isoform to support male fertility and sperm function. *Reproduction* (Cambridge, England), 2025. 169(2), e240256. https://doi.org/10.1530/REP-24-0256. (<u>Impact factor: 3.7</u>). *Cocorresponding authors. *Joint first authors.
- Alok Ghosh Chaudhuri, Saptadip Samanta, Monalisha Dey, Raviraja N S, <u>Souvik Dey</u>*. Role of Alpha-fetoprotein in Pathogenesis of Cancer. *Journal of Environmental Pathology, Toxicology and Oncology.* 2024. 43(2):57-76 (2024) (<u>Impact factor: 2.4</u>).
 *Corresponding author. doi: 10.1615/JEnvironPatholToxicolOncol.2023049145
- Bhattacharya Indrashis*, <u>Dey Souvik</u>* and Banerjee Arnab. Revisiting the Gonadotropic Regulation of Mammalian Spermatogenesis: Evolving Lessons During the Past Decade. *Frontiers in Endocrinology.* 2023. (doi: 10.3389/fendo.2023.1110572). (<u>Impact factor:</u> <u>6.055</u>). **Equal contribution.*
- Bhattacharya Indrashis* and <u>Dey Souvik*</u>. Emerging concepts on Leydig cell development in fetal and adult testis. *Frontiers in Endocrinology*. 2022. 13(1086276) (doi: 10.3389/fendo.2022.1086276). (Impact factor: 6.055). *Corresponding author; equal contribution.
- Mukherjee Soumyadeep, Kar Arpita, Paul Paramita, <u>Dey Souvik</u>, Biswas Avik and Barik Subhasis. In Silico Integration of Transcriptome and Interactome Predicts an ETP-ALL-Specific Transcriptional Footprint that Decodes its Developmental Propensity. Frontiers in Cell and Developmental Biology. 2022. 10(899752) (Impact factor: 6.081). (doi: 10.3389/fcell.2022.899752).
- Eisa Alaa, <u>Dey Souvik</u>, Ignatious Alex, Nofal Wesam, Hess Roy, Kline Douglas, Vijayaraghavan Srinivasan. The protein YWHAE (14-3-3 epsilon) in sperm is essential for male fertility. *Andrology.* 2020. 9(1):312-328 (doi: 10.1111/andr.12865). (<u>Impact factor:</u> <u>4.456</u>).
- <u>Dey Souvik</u>*, Eisa Alaa, Kline Douglas, Wagner Florence, Abeysirigunawardena Sanjaya, Vijayaraghavan Srinivasan. Roles of glycogen synthase kinase 3 alpha (GSK3α) and calcineurin in regulating the ability of sperms to fertilize eggs. *FASEB Journal*. 2020. 34:1247-1269 (doi: 10.1096/fj.201902163R) (<u>Impact factor: 5.834</u>). *Corresponding author.

- Eisa Alaa A., Bang Scott, Crawford Katherine J., Murphy Emily M., Feng William W., <u>Dey</u> <u>Souvik</u>, Wells Wendy, Kon Ning, Gu Wei, Mehlmann Lisa M., Vijayaraghavan Srinivasan, and Kurokawa Manabu. X-Linked Huwe1 Is Essential for Oocyte Maturation and Preimplantation Embryo Development. *iScience*. 2020. 23(9):101523 (Impact factor: 6.107). (doi: 10.1016/j.isci.2020.101523).
- <u>Dey Souvik</u>, Brothag Cameron, Vijayaraghavan Srinivasan. Signaling enzymes involved in sperm maturation and fertilization in mammals. *Frontiers in Cell & Developmental Biology*. 2019. 7(341). (doi: 10.3389/fcell.2019.00341). (<u>Impact factor: 6.081</u>).
- <u>Dey Souvik</u>, Goswami Suranjana, Eisa Alaa, Bhattacharjee Rahul, Brothag Cameron, Kline Douglas, Vijayaraghavan Srinivasan. Cyclic AMP and glycogen synthase kinase 3 form a regulatory loop in spermatozoa. *Journal of Cellular Physiology*. (<u>Impact factor:</u> <u>6.513</u>), 2018. 233(9):7239-7252. (doi: 10.1002/jcp.26557).
- Bhattacharjee Rahul, Goswami Suranjana, <u>Dey Souvik</u>, Brothag Cameron, Woodgett James, Phiel Christopher, Douglas Kline, Vijayaraghavan Srinivasan. Isoform-specific requirement for sperm GSK3α in male fertility. *Biology of Reproduction*. (Impact factor: <u>4.161</u>), 2018. 99(2), 384–394. (doi: 10.1093/biolre/ioy020).
- Andrei Spencer R, Ghosh Monica, Sinharoy Pritam, <u>Dey Souvik</u>, Bratz Ian N, Damron Derek. TRPA1 Ion Channel Stimulation Enhances Cardiomyocyte Contractile Function via a CaMKII-dependent Pathway. *Channels (Austin)*. (<u>Impact factor: 3.493</u>), 2017. 11(6):587-603. (doi: 10.1080/19336950.2017.1365206).
- 14. Roy Debarun, Das Koushik, Mondol Subhasis, Bhowmick Debajit, <u>Dey Souvik</u>, Mukherjee Biswajit, Majumder Gopal C., Bhattacharyya Debdas. Epididymal protein ASF is a D-galactose-specific lectin with apoptotic effect on human breast cancer cell line MCF7. *International Journal of Biological Macromolecules*. (Impact factor: 8.025), 2016. 84 208–220. https://doi.org/10.1016/j.ijbiomac.2015.12.021
- <u>Dey Souvik</u>, Roy Debarun, Majumder Gopal C., Mukherjee Biswajit, Bhattacharyya Debdas. Role of forward-motility-stimulating factor as an extracellular activator of soluble adenylyl cyclase. *Molecular Reproduction & Development*. (Impact factor: 2.812), 2015. 82(12): 1001-1014. (doi: 10.1002/mrd.22586).
- Roy Debarun, <u>Dey Souvik</u>, Majumder Gopal C., Bhattacharyya Debdas. Role of epididymal anti sticking factor in sperm capacitation. *Biochem Biophys Res Commun.* 2015. 463(4):948-53. (<u>Impact factor: 3.322</u>) doi: 10.1016/j.bbrc.2015.06.040.
- Dey Souvik, Roy Debarun, Majumder Gopal C., Bhattacharyya Debdas. Extracellular regulation of sperm transmembrane adenylyl cyclase by a forward motility stimulating protein. *PLoS One*. 2014. 9(10):e110669. doi 10.1371/journal.pone.0110669. (Impact factor: <u>3.752</u>).
- <u>Dey Souvik</u>, Roy Debarun, Majumder Gopal C., Bhattacharyya Debdas. Receptor expression is essential for forward motility in the course of sperm cell maturation. *Biochemistry and Cell Biology* (<u>Impact factor: 3.730</u>), 2014. 92(1): 43-52. (doi: 10.1139/bcb-2013-0080).

- Roy Debarun, <u>Dey Souvik</u>, Majumder Gopal C, Bhattacharyya D. Occurrence of novel Cu²⁺⁻ dependent sialic acid-specific lectin, on the outer surface of mature caprine spermatozoa. *Glycoconjugate Journal*. 2014. 31(4):281-288. (<u>Impact factor: 3.009</u>). (doi: 10.1007/s10719-014-9524-z).
- Roy Debarun, <u>Dey Souvik</u>, Majumder Gopal C., Bhattacharyya Debdas. Copper: a biphasic regulator of caprine sperm forward progression. *Syst Biol Reprod Med.* (Impact factor: 2.958) 2014 Feb; 60(1):52-57. (doi:10.3109/19396368.2013.848243).

Book Chapter publications

- Sounak Sadhukhan & <u>Souvik Dey</u>. Biology, Chemistry and Physics of Cancer Cell Motility and Metastasis. In Cancer Diagnostics and Therapeutics: Current Trends, Challenges and Future Perspective. Edited by S.K. Basu, C.K. Panda, S. Goswami. *Springer Nature, Singapore*. 2021. eBook ISBN: 978-981-16-4752-9. Hardcover ISBN: 978-981-16-4751-2. Pages 91-109. (https://doi.org/10.1007/978-981-16-4752-9_5)
- Majumder, G.C., Saha, S., Das, K., Nath, D., Maiti, A., <u>Dey, S.</u>, Roy, D., Chakrabarty, J., Dungdung, S. R., *et al.* (2015). Role of Sperm Surface Molecules in Motility Regulation. In Mammalian Endocrinology & Mammalian Reproductive Biology, S.K.Singh, ed. (CRC Press, Taylor & Francis Group, USA). eBook ISBN: 9780429068829. pp.197-244. DOI: 10.1201/b18900-9.
- Majumder, G. C., Das, K., Saha, S., Nath, D., Maiti, A., Das, <u>Dey, S.</u>, N., Banerjee, S., Barua, M., Mandal, M., Jaiswal, B. S, Biswas, R., Bhoumik, A., Roy, D., Dey, S., Som, J., Bhattacharyya, D., and Dungdung, S. R. (2012). Purification and Characterization of Novel Sperm Motility-Related Proteins. In Protein Purification, M. Benitez and V. Aguiree, ed. (Nova Publishers, USA) pp 1-90. ISBN: 978-1-61470-098-2.

Proceedings publications

- <u>Dey, S.</u>, Nixon B, Brothag C, Freitas M, Kabi M, Vijayaraghavan S*. (2022). The enzyme GSK3α, a male fertility kinase in mammals, is essential for sperm maturation in the epididymis. In proceedings of the Von Behring-Röntgen-Symposium, "The Epididymis" (Poster Presentation) Giessen, Germany. pp. 52. *Presenter.
- <u>Dey, S.</u>, Eisa, A., Opoku, V., Wagner, F., Kline D., Vijayaraghavan, S. (2019). Mechanistically interrelated roles of GSK3a and calcineurin in regulating the ability of sperm to fertilize eggs. In proceedings of the 44th Annual Conference on the American Society of Andrology (ASA-2019), (Poster Presentation) Chicago, Illinois, USA. pp. 53.
- 3. <u>Dey, S.</u>, Eisa, A., Goswami S., Bhattacharjee, R, Kline D., Vijayaraghavan S. (2018). Epididymal Sperm Maturation: Roles of Calcineurin, PP1_Y2 and GSK3. In proceedings of the 43rd Annual Conference on the American Society of Andrology (ASA-2018), (Poster as well as Oral Presentation) Portland, Oregon, USA. pp. 37.
- 4. <u>Dey, S.</u>, Roy, D., Majumder G. C., and Bhattacharyya, D. (2015). Cell surface interaction and signaling mechanism of a novel sperm forward motility stimulating protein. In proceedings of the 25th International Conference on Reproductive Health (ISSRF-2015) organized by National Institute for Research in Reproductive Health, Mumbai. pp. 179.

- 5. **Dey, S.**, Roy, D., Majumder G. C., and Bhattacharyya, D. (2015). Extracellular regulation of sperm progressive movement by the forward motility stimulating factor. In proceeding of the *International Symposium on Reproductive Biology and Comparative Endocrinology (ISRBCE 2015)* organized by the Deptt. of Zoology, Centre of Advanced Study, Banaras Hindu University, Varanasi. pp. 80.
- <u>Dey, S.</u>, Roy, D., Majumder G. C., and Bhattacharyya, D. (2014). Extracellular regulation of sperm movement by Forward Motility Stimulating Factor. In proceeding of the 2nd International Meet on Advanced Studies on Cell Signaling Network (CeSiN) organized by CSIR-IICB, Kolkata. pp. 88.
- 7. <u>Dey, S.</u>, Roy, D., Majumder G. C., and Bhattacharyya, D. (2014). Forward Motility Stimulating Factor: A potential biomolecule to combat infertility. In proceeding of the 2nd Pharm. Tech. IAPST International Conference on *New Insights into Diseases and Recent Therapeutic Approaches* organized by Deptt. of Pharmaceutical Technology, Jadavpur University and NSHM Knowledge Campus, Kolkata. pp. 113.
- Dey, S., Roy, D., Majumder, G.C., Bhattacharyya, D. Cell surface interaction and signaling mechanism of a novel sperm forward motility stimulating protein. In proceedings of the 22nd West Bengal State Science & Technology Congress (WBSSTC-2015) organized by Department of Science & Technology, Govt. of West Bengal and University of North Bengal (held on 28th-1st March, 2015.), page no. AS-47.

GRANTS/FUNDINGS

- DBT-RLSF, GOI grant; total amount: Rs.1.13 crore (~0.14 million USD); term: 2020-2025.
- MAHE-IM fund; total amount: Rs. 14.94 lakh (~18200 USD); term: 2023-2026.

AWARDS AND HONOURS

- 1. Awarded Ramalingaswami Re-entry Fellowship in 2020 by Department of Biotechnology (DBT), India.
- 2. Received NIH Travel Awards for attending 43rd and 44th Annual Conference of American Society of Andrology as an oral presenter in Portland, Oregon, USA held on April 21-24, 2018 and in Chicago, Il held on April 6-9, 2019, respectively.
- 3. Awarded Senior Research Fellowship (SRF) by Indian Council of Medical Research (ICMR) in 2014.
- 4. Received Junior Research Fellowship (JRF) on Project by DBT, India in 2010.
- 5. CSIR-UGC NET (LS) in 2010 (all India rank-48) and 2008 by Council for Scientific & Industrial Research-University Grant Commission, India.
- 6. Awarded Institutional Junior Research Fellowship (JRF) by Chittaranjan National Cancer Institute, Kolkata in 2009.
- 7. Qualified GATE-Life Sciences in 2009 (percentile-92.95/all India rank-905) by Human Resource Development Group, GOI.
- 8. Awarded National Scholarship for performance in Madhyamik (10th standards) by Govt. of West Bengal, India.

MEMBERSHIP OF SCIENTIFIC SOCIETIES

- Royal Society of Biology, London (Elected Member, MRSB) (Membership # P0142853)
- American Society of Andrology (*Associate membership* # 197381, 2019-22)
- The Physiological Society of India (*Life membership # PSI-LM869*)
- Society for Reproductive Biology & Comparative Endocrinology (*Life membership # LM-511-2021*)
- Indian Society for the Study of Reproduction and Fertility (Life membership # 1570)

- The Society of Biological Chemists (India) (*Life membership # 4278*)
- Manipal Government of Karnataka Bioincubator (*Lifetime membership* # BIL/2022/L/401)

Editorship and Reviewership

- Editorial Board Member at Frontiers Molecular and Cellular Reproduction: Frontiers in Cell Development Biology.
- Active Reviewer for The FASEB Journal, Life Sciences, PLoS One, BBRC, Frontiers in Pharmacology/Oncology/Cell & Dev. Biology, Molecular Reproduction and Development, Reproductive Sciences, Molecular Biology Reports (Springer Nature), etc.

Talks & Presentations

- Delivered an 'Invited Talk' at the "34th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility (ISSRF-2024)" held from February 23rd to 25th, 2024 at IICT Auditorium Indian Institute of Chemical Technology, Mallapur Main Road Tarnaka, Hyderabad, Telangana. Topic title: "Deciphering the Contribution of FTO in Mammalian Spermatogenesis".
- ii. Delivered a "Short Invited Talk" at the 9th International Conference on Molecular Signaling 2024. The conference was held from February 1st to 3rd, 2024, and will be hosted by the Department of Animal Biology, School of Life Sciences, University of Hyderabad, Hyderabad. Topic title: "*Role of FTO, an RNA-specific demethylase, in Spermatogenesis*".
- Delivered an 'Invited Talk' at the 46th Annual Meeting of the Environmental Mutagen Society of India (EMSI) 2024, hosted by the Department of Zoology, School of Biological Sciences, Central University of Kerala, Periya campus, Kasaragod, on January 29 to 31, 2024. Topic title: "Influence of Environmental Mutagens in m6A Level in Testis".
- iv. Delivered an oral presentation titled "Centromere Protein V (CENPV) Mediates GSK3a Activity in Mammalian Sperm" at the 40th Annual Meeting of the SRBCE & 'International Conference on Molecular Medicine, Reproduction and Endocrinology 2023'. The conference was held at Navarachana University, Vadodara, Gujarat between 14th to 16th September 2023.
- v. Delivered a Young Investigator Talk at 39th Annual Meeting of SRBCE & National Conference on Reproductive Biology, Comparative Endocrinology and Development held between 14th-16th September 2022 at CCMB, Hyderabad, on the topic titled "A Regulatory Loop between Cyclic AMP and Glycogen Synthase Kinase 3 functions in Mammalian Spermatozoa".
- vi. Delivered an Invited Talk at 38th Annual Meeting of SRBCE & National Conference on Reproduction and Endocrinology held between 28th-30th December 2021 at Mysore, KA on the topic entitled as *Relationship of GSK3a and calcineurin in regulation of male fertility*.

vii. Made an oral presentation at the International Conference on Reproductive Healthcare & 32nd Annual Meeting of the Indian Society for the Study of Reproduction and Fertility 11th-13th February 2022 on the topic entitled as *PKACa2*, *PP1y2*, *PPP3R2/CC* & *GSK3a forms a Quad to regulate male fertility in mammals*.

Workshops/Training Programs Organized

- i. Organized a Seven-day hands-on workshop as the <u>Organizing Secretary</u> on "Technical Approaches Involved in the Purification and Characterization of Biomolecules" under the DST-STUTI scheme in association with ICT, Mumbai on December 4 to 10, 2023, at MCBR, MAHE, Manipal.
- ii. Organized a four-day hands-on training program titled "FPLC & BIO-LC Workshop' on July 24-27, 2024 as the Convener at MCBR, MAHE, Manipal.

Workshop & Certificate Course attended

- Participated as a panel member in the Indo-German workshop on *Translational Research in Andrology*, organized by the Indo-German Science & Technology Center (IGSTC) at KMC, Manipal on Feb 28 & March 1, 2025.
- Andrology Laboratory Workshop on "*Modern Semen Analysis: Elevate Your Tools, Techniques and Thinking*" on Saturday, April 6 to Sunday, April 7, 2019 in Chicago, IL, organized by American Society of Andrology.
- Successfully completed an 8-week Certificate Course on Bioinformatics conducted from 1st Feb to 30th March 2022, by the Manipal School of Life Sciences, MAHE, Manipal.
- Attended the International Virtual Workshop '*Bioelectronic Medicine*', jointly organized by IIT (BHU) Varanasi and IISc Bangalore and co-hosted by the Henry Royce Institute, University of Manchester, UK on December 16, 2021.

AREAS OF EXPERTISE

Biochemical techniques

- Enzymatic assay development (radioactive and non-radioactive)
- Column chromatography-techniques for purification of biomolecules (including Abs)
- Protein pull-down and Immuno/Co-immunoprecipitation techniques
- Phospho-protein enrichment. Proteolytic digestion and purification of peptides
- Chemical coupling of purified protein/Ab with enzyme/fluorophore and polymer matrices.
- Electrophoretic (native & SDS-PAGE, tube gel for pI estimation) and blotting techniques (including immunoblot, Western blot and those used in clinical HIV detection labs.)

Instrument handling

• FPLC, HPLC, FACS, CASA (Computer-assisted sperm analysis), Spectrofluorometer, UV-Visible spectrophotometer, Confocal fluorescence microscope, ELISA reader, FT-IR, etc.

Animal works

- Experimental handling of animals (viz. C57BL/6 and CD1 mice; New Zealand breed rabbit)
- Isolation of reproductive tissues and cells from mouse, rat, bull, goat and buffalo.
- *In vitro* fertilization (IVF) assay using mouse model.
- Generation and maintenance of Knock-out mice line using Cre-lox system
- Feeding, injection of drugs/cells (subcutaneous, intravenous, peritoneal), blood/fluid collection from mice; assessment of effect of novel biomolecules and drugs/tumor development/tumor site detection and its analysis
- Immunization of rabbit and collection of pre-immune/anti sera from ear vein.

Cell biology and immunology

- Handling of human and animal blood/semen (for motility analysis) samples
- Isolation of immune cells from blood and other tissues
- Cell proliferation and cytotoxicity/genotoxicity assays: MTT assay, Annexin V/PI staining.
- Animal and microbial cell culture and assay techniques/ Cell line maintenance
- Microscopic analysis of cell/ tissue samples by fluorescent/chemical staining

Molecular biology

- Expression of mammalian recombinant proteins in bacterial system
- Genotyping by PCR; RT-PCR and RNA methylation study

Others

• Scientific project writing and reporting; maintenance of resources of scientific laboratory

DATE, PLACE OF BIRTH

May 20, 1984 in Kolkata, WB, India; Nationality: Indian.

Hobbies: Writing popular science articles, gardening, hydroponics.

REFEREES

1. **Dr. Srinivasan Vijayaraghavan, Ph.D.** Professor, Department of Biological Sciences, Kent State University, Kent, Ohio, USA. PIN:

44242, Ph.:+1-330-672-9598 (Office) / Mob: +1-216-272-9241; E-mail: svijayar@kent.edu

2. Dr. Gopal Chandra Majumder, Ph.D.

Senior Scientist, Centre for Rural & Cryogenic Technologies, Jadavpur University. Kolkata. PIN: 700032, Ex. Scientist 'F' (Director Grade), Indian Institute of Chemical Biology-CSIR, Kolkata. WB, India. Ph.: 03324146965, Fax: 03324137121, Email: majumdergc42@yahoo.co.in

3. Dr. Biswajit Mukherjee, Ph.D.

Professor, Department of Pharmaceutical Technology, Jadavpur University. Kolkata. PIN: 700032, WB, India. Ph.: +91-33-24146677/ 24572588, Fax: +91-33-24146677, Email: biswajit55@yahoo.com, biswajit.mukherjee@jadavpuruniversity.in

I hereby declare that the information stated above is true to the best of my knowledge.

Place: Manipal Date: March 2025

Somit Days

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