

CURRICULUM VITAE

Dr. Mukesh K. Gupta,

BVSc, MVSc, PhD, FRSB, FNAAS, FNADS, FSAB, FAELS, FIAAVR, MNABS

Professor,

Department of Biotechnology and Medical Engineering,


National Institute of Technology Rourkela,

Odisha 769 008, India.

Tel. No. : +91-661-2462294/ +91-78734-82264

Fax: +91-661-2472926 (Attn: MK Gupta)



 guptam@nitrkl.ac.in
mukeshkgupta@gmail.com

Education

Degree	University	Year	Distinction
Doctorate (PhD)	Konkuk University, South Korea	2004-2007 (3 Years)	Distinction for Best Research
Masters (MVSc)	TANUVAS University, India	2001-2003 (2 Years)	Distinction with Gold Medal
Bachelors (BVSc & AH)	Pondicherry University, India	1996-2001 (5 Years)	Distinction with Gold Medal

Employment

Position	Employer	Duration
Professor, Biotechnology & Medical Engineering,	National Institute of Technology Rourkela, Odisha	Feb. 2020 – Until
Associate Professor and Head, Biotechnology & Medical Engineering,	National Institute of Technology Rourkela, Odisha	July 2015 – June 2018
Head, Central Instrumentation Facility	National Institute of Technology Rourkela	July 2017 – June 2018
Associate Professor, Biotechnology & Medical Engineering,	National Institute of Technology Rourkela, Odisha	Dec. 2011 – Feb. 2020
Associate Professor, Biotechnology	Konkuk University, South Korea	Mar. 2011 – Dec. 2011
Assistant Professor, Biotechnology	Konkuk University, South Korea	Mar. 2007 – Feb. 2011
Participating Faculty	Institute of Biomedical Science	Mar. 2007 – Dec.

	& Technology, South Korea	2011
Visiting Professor	Institute Superior Technico (Univesitate de Lisboa), Portugal	April 2018 – April 2018
Visiting Professor	University of Warsaw, Poland	Mar. 2017 – Mar. 2017
Visiting Professor	Konkuk University, South Korea	Oct. 2013 – Oct. 2013
Visiting Professor	University of Malaya, Malaysia	Jan. 2010 – Feb. 2010
Research Associate	Bio-Organ Research Center, South Korea	Mar. 2006 – Feb. 2007
Research Assistant	Bio-Organ Research Center, South Korea	Mar. 2004 – Feb. 2006
Teaching Assistant	Dept. of Animal Biotechnology, Konkuk University, South Korea	Mar. 2004 – Feb. 2007

Other Professional Positions/ Awards/ Recognitions

Professional Positions/ Awards/ Recognitions	Appointing/ Awarding Agency	Year
Chairman, Organizing Committee	Central Seat Allocation Board for B.Tech/B.Arch – 2022 (CSAB-2022)	2022
Member, Technical Committee	Centralized Counseling for M.Tech/M.Plan – 2022 (CCMT-2022) and CCMN-2022	2022
Subject Expert, Veterinary and Animal Sciences – IV	National Testing Agency	2022
Fellow (FNAAS)	National Academy of Agricultural Sciences (NAAS), India	2022
Fellow (FNADS)	National Academy of Dairy Sciences (NADS), India	2022
Associate Fellow	National Academy of Veterinary Sciences (NAVS), India	2022
Fellow (IAAVR)	Indian Association for Advancement of Veterinary Research	2022
Associate Editor	Frontiers in Genetics (Livestock Genomics)	2022
Associate Editor	Frontiers in Veterinary Sciences (Livestock Genomics)	2022

Editorial Board Member	Frontiers in Cell and Developmental Biology	2022
Nodal Officer, Bureau of Indian Standards (BIS) Standardization Chair Professor, NIT Rourkela	Bureau of Indian Standards (BIS) / NIT Rourkela	2022
Member, Publication Ethics Committee	Council of Asian Science Editors (CASE)	2022
Vice-Chair	IEEE (USA), Rourkela Chapter	2021
Member, Technical Committee	Centralized Counseling for M.Tech/M.Plan – 2021 (CCMT-2021) and CCMN-2022	2021
Coordinator	DBT-Center for Bioinformatics and Computational Biology: <i>Animal Bioinformatics</i>	2021
Member	Institutional Ethics Committee, NIT Rourkela	2021
Fellow (FRSB)	Royal Society of Biology, UK	2020
Mentor, Next Generation Incubation	Software Technology Park of India	2020
Subject Expert	All India Council for Technical Education (AICTE), New Delhi, Govt. of India	2020
Member, Global Academic Council	Bihar Brains Development Society	2020
Member, Core Committee and Technical Committee	Centralized Counseling for M.Tech/M.Plan – 2020 (CCMT-2020)	2020
Member, Financial Advisory Committee	National Institute of Technology Rourkela	2020
Member	Society of Cryobiology, USA	2019
Mentor, NIT Meghalaya	MoE-NPIU, Govt. of India	2019
Mentor, IIIT Manipur	MoE-NPIU, Govt. of India	2019
Performance Auditor, Rajakiya Engineering College, Azamgarh	MoE-NPIU, Govt. of India	2019
Chairman, Core Committee and Technical Committee	Centralized Counseling for M.Tech/M.Plan – 2019 (CCMT-2019)	2019
Expert Member, Technical Evaluation Committee	BIRAC-BIG, KIIT, Bhubaneswar	2018
Member, Expert Committee	Selection of Assistant Professors under TEQIP-III, under World Bank	2018

Nominee	CPCSEA, MoEF&CC, GoI	2017
Executive Member	HERITAGE Network, Ecole Centrale de Nantes, France	2017
Member, Board of Studies	Amity University, Ranchi	2017
Member, External Examiner Board	University of Malaya, Malaysia	2017
Co-coordinator	TEQIP-III, NIT Rourkela	2017
Head	Central Instrumentation Facility, NIT Rourkela	2017
Coordinator, International Exchange Program	NIT Rourkela	2016
Chairman	Institutional Biosafety Committee (IBSC), NIT Rourkela	2016
Vice-Chairman, Organizing Committee	Centralized Counseling for M.Tech/M.Plan – 2015 (CCMT-2015)	2015
Head of Department	Department of Biotechnology and Medical Engineering, NIT Rourkela	2015
Editorial Board Member	Indian Journal of Veterinary Science and Biotechnology (NAAS Rating: 5.58; NAAS Journal ID: T032; ISSN: 2394-0247)	2015
Associate Editor	Manthan (Journal) (ISSN: 0974-6331)	2015
Executive Member	Council of Asian Science Editors (CASE)	2014
Data Auditor	TEQIP-II at NERIST, Arunachal Pradesh	2014
Fellow (FAELS)	Academy of Environment and Life Sciences	2013
Fellow (FSAB)	Society for Applied Biotechnology	2013
Member (MNABS)	National Academy of Biological Sciences	2013
Editorial Board Member	Progress and Communication in Science (ISSN: 2288-7113)	2013
Coordinator	DBT-Bioinformatics Infrastructure Facility, NIT Rourkela	2012
Coordinator	Erasmus Mundus International Exchange Program	2012

Scientific Steering Committee Member	Asian Reproductive Biotechnology Society (ARBS)	2012
Editorial Board Member	Journal of Krishi Vigyan (NAAS Rating: 4.55; NAAS Journal ID: J322; ISSN: 2319-6432)	2012
Editorial Board Member	Journal of Animal Research (NAAS Rating: 5.43; NAAS Journal ID: J049; ISSN: 2249-6629)	2011
Executive Member	Bihar Foundation	2007
Best Research Award	Korean Society of Animal Reproduction (KSAR), Seoul, South Korea	2005
Seoul Science Fellowship	National Academy of Sciences, South Korea	2004
Dr. S. N. Luktuke Award	Indian Society for Study of Animal Reproduction (ISSAR)	2003
University Gold Medal for Best MVSc (OG) Research	TANUVAS University	2003
Junior Research Fellowship (JRF)	Indian Council of Agriculture Research (ICAR)	2001
Pfizer's Best Veterinary Clinician Award	Pfizer	2001
Dr. B. Nandakumaran Memorial Gold Medal Award	Rajiv Gandhi College of Veterinary and Animal Sciences	2001
Partha Sarathi Das Memorial Award	Rajiv Gandhi College of Veterinary and Animal Sciences	2001
Dr. Y.V.B.Gangadhara Rao Memorial Gold Medal Award	Rajiv Gandhi College of Veterinary and Animal Sciences	2001
Pondicherry University Prize	Pondicherry University	2001
Youth Leadership Award	Rotary Club of Pondicherry Mid-Town	2000
PTA Merit Scholarship Awards	Rajiv Gandhi College of Veterinary and Animal Sciences	1996, 1997, 1998, 1999, 2000
Gold Medal	BBS Pravanand Vidyamandir	1990

Patents and Software Copyrights

Granted Status:

1. Ready-to-use PVA-PVP based patch for wound dressing and tissue engineering applications. (Patent# 345685; Granted on 31.08.2020).
2. A one-stop graphical user interface (GUI) for genomic, transcriptomic and proteomic analysis and maintenance of workstation through fast rebooting. Indian Copyright (Registration No.: SW-12118/2019; dated: 22.01.2019).
3. Predicting the transplantation dose and tracing the lineage upon testicular transplantation of male germ-line stem cells into testes. Indian Copyright (Registration No: SW-11982/2018; dated:19.12.2018).
4. Novel method for isolating and cultivating Spermatogonial Stem Cells in Pig. Korean Patent# KR101173116 (B1); KR20120013160 (A). 14 Feb 2014.
5. MicroRNA for distinguishing testes-derived male germ-line stem cells and method thereof. Korean Patent# KR101237859 (B1); KR20120013159 (A). 14 Feb 2014.
6. Composition and method of improving blastocyst hatching using dickkopf-1 and method thereof. Korean Patent# KR20120013157(A); KR101261000 (B1). 06.05.2013.
7. Composition that blocks and synchronizes the meiotic progression of oocytes comprising 3-methyladenine and method thereof. Korean Patent# KR20120021486 (A); KR101249268 (B1). 09 March 2012.
8. MicroRNA for distinguishing testes-derived male germ-line stem cells and method thereof. Korean Patent# KR101237860 (B1); KR20120013163 (A). 14 Feb 2012.
9. A novel method of oocyte mediated gene transfer and for producing transgenic embryos using the same. Korean Patent # KR20110097488 (A); KR101169762 (B1). 31 Aug 2011.
10. A composition for the improvement of embryo development comprising flavonoid and the method thereof. Korean Patent# KR20100105180 (A); KR101586992 (B1). 29 Sep 2010.
11. Composition for increasing developmental rate of porcine embryos. Korean Patent# KR100882858 (B1); KR20090002880 (A). 09 Jan 2009.
12. Method for producing interspecies transgenic animal using porcine oocyte. Korean Patent# KR100837415 (B1). 12 Jun 2008.
13. Methods of and compositions for improving development of embryos. Korean Patent# KR100817020 (B1). 27 March 2008.
14. Methods for producing transgenic embryos. Korean Patent# KR101398220 (B1); KR20080038549 (A). 07 May 2008.

Filed Status:

15. A method of rapid detection of DNA fragmentation in human sperm. Indian Patent (2017 3101 6070; Submitted on 08.05.2017).
16. A user-friendly software and graphical user interface (GUI) for exact pattern matching of nucleotide sequences with nucleotide databases of animals using sequential approach algorithm. Indian Copyright (Dairy Number: 16651/2021-CO-SW; Filed on 21.07.2021).
17. A software for tracing stem cell niche and lineage. Indian Copyright (Dairy Number: 3115/2016-CO/SW; filed on 12.03.2016).
18. A graphical user interface (GUI) for bioinformatics workstation. Indian Copyright (Dairy Number: 3114/2016-CO/SW; filed on 12.03.2016).

Publications

Year 2022:

1. Umesh A, Guttula PK, **Gupta MK***. 2022. Prediction of potential molecular markers of bovine mastitis by meta-analysis of differentially expressed genes using combined p-value and robust rank aggregation. Tropical Animal Health and Production. TROP-D-21-01764. [SCI]. Accepted on 29.07.2022.
2. Singh YP, Mishra B, **Gupta MK**, Mishra NC, Dasgupta S. 2022. Enhancing physicochemical, mechanical and bioactive performances of monetite nanoparticles reinforced chitosan-PEO electrospun scaffold for bone tissue engineering. Journal of Applied Polymer Science. App.20220368. [SCI]. Accepted on 14.07.2022.
3. Bhaskar R, Sahoo B, Han SS*, **Gupta MK***. 2022. Generation of tail bearing sperm-like cells from in vitro spermatogenesis of farming goat testis. The Thai Journal of Veterinary Medicine. MS#TJVM-202200044. [SCI]. Accepted on 02.06.2022.
4. Swain S, Bhaskar R, Mishra B, **Gupta MK**, Sharma S, Dasgupta S, Kumar P. 2022. Microstructural, dielectric, mechanical, and biological properties of Hydroxyapatite (HAp)/BZT-BCT (0.5Ba(Zr_{0.2}Ti_{0.8})O₃-0.5(Ba_{0.7}Ca_{0.3})TiO₃) biocomposites with improved mechano-electrical properties for bone repair. Ceramic International. [SCI]. Accepted on 09.05.2022.
5. Umesh A, Kumar P, Pandey RC, **Gupta MK***. 2022. Evidence mapping and review of Long-COVID and its underlying pathophysiological mechanism. Infection. DOI: 10.1007/s15010-022-01835-6. [SCI]. Accepted on 11.04.2022.
6. Bhaskar R, **Gupta MK***, Han SS*. 2022. Tissue engineering approaches for the in vitro production of spermatids to treat male infertility: A Review. European Polymer Journal. 174:111318. [SCI]

7. Chakraborty D, Sharma N, Kour S, Sodhi SS, **Gupta MK**, Lee SJ*. 2022. Applications of omics technology for livestock selection and improvement. *Frontiers in Genetics*. 13:774113. DOI: 10.3389/fgene.2022.774113. [SCI].
8. Singh H, Bashir SM, Purohit SD, Bhaskar R, Rather MA, Ali SI, Yadav I, Makhdoomi DM, Dar MUD, Gani MA, **Gupta MK**, Mishra NC*. 2022. Nanoceria laden decellularized extracellular matrix-based curcumin releasing nanoemulgel system for full-thickness wound healing. *Biomaterials Advances (Formally, Materials Science & Engineering C)*. 137:212806. DOI: 10.1016/j.bioadv.2022.212806. [SCI]
9. Guttula PK, **Gupta MK***. 2022. Dynamic basis of mRNA processing in male germline stem cell pluripotency and reprogramming by alternative polyadenylation. *Int. J. Data Mining and Bioinformatics*. 25:145-160; DOI:10.1504/ijdbm.2021.122850.[SCI]
10. Guttula PK, Agarwal K, **Gupta MK***. 2022. Protein-protein interaction map in pre-eclampsia through integrating hub genes, transcription factors and microRNAs. *BioRxiv*. bioRxiv 2022.02.28.482425; DOI: 10.1101/2022.02.28.482425.
11. Patra T, **Gupta MK***. 2022. Solid surface vitrification of goat testicular cell suspension enriched for spermatogonial stem cells. *Cryobiology*. 104:8-14. DOI: 10.1016/j.cryobiol.2021.11.177. [SCI].
12. Singh H, Purohit S, Bhaskar R, Yadav I, **Gupta MK**, Mishra NC*. 2022. Development of decellularization protocol for goat small intestine submucosa as a biomaterial. *Biomaterials and Biosystems*. 5: 100035. DOI: 10.1016/j.bbiosy.2021.100035 [SCI].
13. Singh H, Purohit S, Bhaskar R, Yadav I, Bhushan S, **Gupta MK***, Mishra NC. 2022. Curcumin in decellularized goat-SIS for wound healing and skin tissue engineering. *Journal of Biomedical Material Research Part B: Applied Biomaterials*. 110:210-219. DOI: 10.1002/jbm.b.34903. [SCI]
14. Sahoo B, Vikas YNV, Anushri U, Guttula PK, **Gupta MK***. 2022. RNA population in goat spermatozoa and their relevance to male fertility. *Proceedings of the International Conference on Reproductive Healthcare and the 32nd Annual Meeting of the Indian Society for the Study of Reproduction and Fertility (ISSRF-2022) held online during 11-13th Feb. 2022*. Pg. 127. (Abstr.).
15. **Gupta MK***. 2022. Transgenic chicken as bioreactor for producing pharmaceutical proteins. *Compendium of the XXIX conference of the Indian Association for the Advancement of Veterinary Research (IAAVR) and National Symposium held during 08-09 April 2022*. Pg. 21 (Abstr.).

16. **Gupta MK***. 2022. Testicular stem-cell mediated transgenesis and in vitro spermatogenesis. Proceedings of the NAAS. (Abstr.)

Year 2021:

17. Umesh A, Guttula PK, **Gupta MK***. 2021. Prediction of molecular markers of bovine mastitis by meta-analysis of differentially expressed genes using combined p-value and robust rank aggregation. *BioRxiv*. bioRxiv 2021.11.24.469841; DOI: 10.1101/2021.11.24.469841.
18. Sahoo B, Choudhary RK, Sharma P, Choudhary S, **Gupta MK***. 2021. Significance and relevance of spermatozoal RNAs to male fertility in livestock. *Frontiers in Genetics*.12:768196.DOI: 10.3389/fgene.2021.768196. [SCI]
19. Swain S, Bhaskar R, **Gupta MK**, Sharma S, Dasgupta S, Kumar A, Kumar P. 2021. Mechanical, electrical and biological properties of mechanochemically processed hydroxyapatite ceramics. *Nanomaterials*. 11:2216. DOI: 10.3390/nano11092216. [SCI].
20. Mishra B, Hossain S, Mohanty S, Gupta **MK**, Verma D. 2021. Fast acting hemostatic agent based on self-assembled hybrid nanofibers from chitosan and caesin. *International Journal of Biological Macromolecules*. 185:525-534. DOI: 10.1016/j.ijbiomac.2021.06.116.[SCI]
21. Devi S, Sharma N, Ahmed T, Huma ZL, Kour S, Sahoo B, Singh AK, Macesic N, Lee SJ, **Gupta MK**. 2021. Aptamer-based diagnostic and therapeutic approaches in animals – Current potential and challenges. *Saudi Journal of Biological Sciences*. 28:5081-5093. DOI: 10.1016/j.sjbs.2021.05.031. [SCI]
22. Sahoo B, Mishra B, Dash S, Srimeenakshi S, Guttula PK, Bhaskar R, **Gupta MK**. 2021. Molecular modeling and co-expression analysis of human stem cell factor as fusion partner to granulocyte colony stimulating factor for improving their bioactivity. *Journal of Biomolecular Structure & Dynamics*. 39:4990-5004 DOI: 10.1080/07391102.2020.1796792.[SCI]
23. Guttula PK, Monteiro PT, **Gupta MK**. 2021. Prediction and Boolean logical modeling of synergistic microRNAs regulatory networks during reprogramming of male germline pluripotent stem cells. *BioSystems*. 207:104453. DOI: 10.1016/j.biosystems.2021.104453. [SCI].
24. Pusph P, Bhaskar R, Kelkar S, Sharma N, Pathak D, **Gupta MK***. 2021. Poly(vinylalcohol) and poly(vinylpyrrolidone) based patches with tunable mechanical properties for cardiac tissue engineering applications. *Biotechnology and Bioengineering*. 118: 2312-2325. DOI: 10.1002/bit.27742. [SCI]

25. Sahoo B, Guttula PK, **Gupta MK***. 2021. Comparison of spermatozoal RNA extraction methods in goats. *Analytical Biochemistry*. 614:114059. DOI: 10.1016/j.ab.2020.114059. [SCI]
26. Ng CL, Tan GC, Yow YY, **Gupta MK**, Kwong PJ. 2021. *Gracilaria changii* (Rhodophyta) alleviates bisphenol A (BPA)-induced adverse reproductive abnormalities in mice. *Asian Pacific Journal of Tropical Medicine*. 14:34-43. DOI: 10.4103/1995-7645.304299 [SCI].
27. Patra T, Pathak D, **Gupta MK**. 2021. Comparison of two culture methods during in vitro spermatogenesis of vitrified-warmed testis tissue: Organ culture vs. Hanging drop culture. *Cryobiology*. 100: 142-450. DOI: 10.1016/j.cryobiol.2021.02.006 [SCI].
28. Patra T, Pathak D, **Gupta MK**. 2021. Strategies for cryopreservation of testicular cells and tissues in cancer and genetic diseases. *Cell and Tissue Research*. 385:1-19. DOI: 10.1007/s00441-021-03437-4. [SCI].
29. Singh H, Purohit SD, Bhaskar R, Yadav I, Bhushan S, **Gupta MK**, Gautam S, Showkeen M, Mishra NC. 2021. Biomatrix from goat-waste in sponge/gel/powder form for tissue engineering and synergistic effect of Nanoceria. *Biomedical Materials*. 16:025008. doi: 10.1088/1748-605X/abdb74 [SCI].
30. Pushp P, Nogueira DES, Rodrigues CAV, Cabral JMS*, **Gupta MK***. 2021. A concise review on induced pluripotent stem cell-derived cardiomyocytes for personalized regenerative medicine. *Stem Cell Reviews and Reports*. 17:748-776. DOI: 10.1007/s12015-020-10061-2. [SCI]
31. Patra T, **Gupta MK**. In vitro spermatogenesis of vitrified-warmed goat testicular tissue by organ culture method. Proceedings of the 31stInternational Conference on Challenges and Strategies in Reproductive and Environmental Health, Indian Society for Study of Reproduction and Fertility (ISSRF) held online during 19-21 Feb. 2021. Pg. 394. (Abstr.)
32. **Gupta MK**, Patra T, Bhaskar R. 2021. Air-liquid interface culture for in vitro spermatogenesis from goat testicular tissue. Proceedings of the 31stInternational Conference on Challenges and Strategies in Reproductive and Environmental Health, Indian Society for Study of Reproduction and Fertility (ISSRF) held online during 19-21 Feb. 2021. Pg. 410-411. (Abstr.)

Year 2020:

33. Purohit SD, Singh H, Bhaskar R, Yadav I, Bhushan S, **Gupta MK**, Kumar A, Mishra NC. 2020. Fabrication of grapheme oxide and nanohydroxyapatite reinforced gelatin-alginate nanocomposite scaffold for bone tissue regeneration. *Frontiers in Materials*. 7:00250 DOI: 10.3389/fmats.2020.00250. [SCI]

34. Purohit SD, Singh H, Bhaskar R, Yadav I, Chou CF, **Gupta MK**, Mishra NC*. 2020. Gelatin-Alginate-Cerium Oxide nanocomposite scaffold for bone regeneration. *Materials Science and Engineering C*. 116:111111. DOI: 10.1016/j.msec.2020.111111. [SCI]
35. Maji K, Bhaskar R, Dasgupta S, **Gupta MK**. 2020. Photo-crosslinked Alginate Nano-Hydroxyapatite Paste for Bone Tissue Engineering. *Biomedical Materials*. 15: 055019. DOI: 10.1088/1748-605X/ab9551. [SCI]
36. Mishra B, Giridharan M, Sahoo B, Uhm SJ, **Gupta MK***. 2020. Combinatorial ethanol treatment increases the overall productivity of recombinant rhG-CSF in *E. coli*: A comparative study. *Applied Microbiology and Biotechnology*. 104: 9135-9145. DOI: 10.1007/s00253-020-10899-z. [SCI]
37. Guttula PK, Monteiro PT, **Gupta MK***. 2020. A Boolean Logical model for Reprogramming of Testes-derived male Germline Stem Cells into Germline pluripotent stem cells. *Computer Methods and Programs in Biomedicine*. 192:105473. DOI: 10.1016/j.cmpb.2020.105473. [SCI]
38. Huma ZL, Sharma N, Kour S, Tandon S, Guttula PK, Kaur S, Singh AK, Singh R, **Gupta MK***. 2020. Putative biomarkers for early detection of mastitis in cattle. *Animal Production Science*. 60:1721-1736. DOI: 10.1071/AN19539[SCI]
39. Patra T, **Gupta MK***. 2020. Evaluation of sodium alginate for encapsulation-vitrification of testicular Leydig cells. *International Journal of Biological Macromolecules*. 153:128-137. DOI: 10.1016/j.ijbiomac.2020.02.233. [SCI ; IF: 4.784]
40. Guttula PK, Agarwal K, Natarajan P, **Gupta MK***. 2020. Pharmacophore modeling coupled with Scaffold hopping to identify novel and potent RSK2 protein antagonists as anti-cancer agents. *Journal of Biomolecular Structure & Dynamics*. 38:4947-4955. DOI: 10.1080/07391102.2019.1689172. [SCI]
41. Guttula PK, **Gupta MK***. 2020. Examining the Co-Expression, Transcriptome Clustering and Variation using Fuzzy Cluster Network of Testicular Stem cells and Pluripotent Stem cells compared with other cell types. *Computational Biology and Chemistry*. 85:107227. DOI: 10.1016/j.compbiolchem.2020.107227. [SCI]
42. Pushp P, Sahoo B, Ferreira FC, Cabral JMS, Platzgummer AF, **Gupta MK***. 2020. Functional comparison of beating cardiomyocytes differentiated from umbilical cord derived mesenchymal stem cells and human foreskin derived induced pluripotent stem cells. *Journal of Biomedical Materials Research Part A*. 108A:496-514. DOI: 10.1002/jbm.a.36831. [SCI]
43. Govindaiah P, Bhaskar R, Guttula PK, **Gupta MK**, Madda JP. 2020. Design, Synthesis, Biological and In Silico Evaluation of Phenylene (Bis) Hydrazones against

against Osteosarcoma cancer. *European J of Molecular & Clinical Medicine* (Formally: *New Horizons in Translational Medicine*). 7: 2617-2632. [Scopus]

44. **Gupta MK***. 2020. Newer approaches for pharmaceutical protein production: testicular stem cell-mediated transgenesis. *Proceedings of the 8th Bihar Science Congress held during 03-05 Dec 2020*. Pg. 38. Oral Presentation (Held Online). (Abstr.)
45. Patra T, **Gupta MK***. 2020. Solid surface vitrification: A promising approach for testis tissue vitrification. *Proceedings of the 57th Annual Meeting of the Society for Cryobiology- CRYO2020*. Held during 21-23 July 2020. Pg. 83-84. Oral Presentation (Held Online). (Abstr.)
46. Patra T, **Gupta MK***. 2020. Cryopreservation of goat testicular tissue by modified solid surface vitrification. *Proceedings of the World Congress on Reproductive Health with Emphasis on Reproductive Caners, Infertility and Assisted Reproduction & the 30th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility (ISSRF) held at Jammu during 14-16 February 2020*. Pg. 166. (Abstr.)
47. Pushp P, **Gupta MK***. 2020. Proliferation and differentiation of stem cells for cardiac tissue engineering applications. *Proceedings of the 5th Annual Symposium on Cell and Gene Therapy conducted by the Center for Stem Cell Research (a unit of InStem) at CMC Vellore during 3-4 September 2020*. (Abstr.)
48. Patra T, **Gupta MK**. 2020. In vitro spermatogenesis of vitrified-warmed goat testicular tissue by organ culture method. (Abstr.)
49. Gupta MK. 2020. Value addition through animal transgenesis. *Proceedings of the 2nd National Conference of Krishi Vigyan Kendra on Advances on Sustainable Agriculture held during 26-28 September 2020 (Online)*. 2609155. (Abstr.)

Year 2019:

50. **Gupta MK***, Heo YT, Kim DK, Lee HT, Uhm SJ. 2019. 5-Aza-Cytidine improves the meiotic maturation and subsequent in vitro development of pig oocytes. *Animal Reproduction Science*. 208:106-118. doi: 10.1016/j.anireprosci.2019.106118. [SCI]
51. Guttula PK, Gopalakrishnan C, **Gupta MK***. 2019. Screening and in silico analysis of deleterious nsSNPs (missense) in human CSF3 for their effects on Protein Structure, Stability and Function. *Computational Biology and Chemistry*. 82:57-64. DOI: 10.1016/j.compbiolchem.2019.06.001. [SCI]
52. Purohit SD, Bhaskar R, Singh H, Yadav I, **Gupta MK**, Mishra NC*. 2019. Development of a novel nanocomposite scaffold of Gelatin–Alginate–Graphene Oxide for bone tissue engineering. *International Journal of Biological Macromolecules*. 133:592-602. DOI: 10.1016/j.ijbiomac.2019.04.113 [SCI; Impact Factor: 4.784].

53. Patra T, **Gupta MK***. 2019. Cryopreservation of murine testicular Leydig cells by modified solid surface vitrification and supplementation of antioxidants. *Cryobiology*. 88:38-46. DOI: 10.1016/j.cryobiol.2019.04.002 [SCI].
54. Patra T, **Gupta MK***. 2019. In vitro spermatogenesis of cryopreserved testicular tissue for male infertility. *Cryobiology*. 91:153. (Abstr.) DOI: 10.1016/j.cryobiol.2019.10.035 [SCI]
55. Patra T, **Gupta MK***. 2019. In vitro spermatogenesis of cryopreserved testicular tissue for male infertility. Proceedings of the 56th Annual Meeting of the Society for Cryobiology- CRYO2019. Held at San Diego, USA during 22-25 July 2019. Pg. 14-15. Oral Presentation. (Abstr.)
56. Pradeep N, **Gupta MK***. 2019. Scaffold hopping strategy on the route discerning novel Glutathione peroxidase agonists. Albany 2019: The 20th Conversation, June 11-15, 2019. *Journal of Biomolecular Structure & Dynamics*. Pg. 19039. (Abstr.) [SCI]
57. Kumar S, Guttula PK, **Gupta MK***. 2019. Classification of Pluripotent genes using Machine Learning Techniques. Proceedings of the 20th International Conference on Conference on System Biology (ISCB 2019). (No.: 307) (Abstr.)
58. Sahoo B, Guttula PK, **Gupta MK***. 2019. Integrative bioinformatics approach to identify novel marker genes in fertile and infertile sperm samples. Proceedings of the Global Conference on Reproductive Health with Focus on Occupational, Environmental & Lifestyle Factors along with the 29th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility (ISSRF) held at JNU, New Delhi during 22-24th Feb 2019. Pg.: 160 (Abstr.)
59. Sahoo B, Bhaskar R, **Gupta MK***. 2019. A comparative study for the evaluation of RNA extraction methods in goat sperm. Proceedings of the International Conference on Reproduction, Endocrinology and Development (ICRED). Held at Navrachna University, Gujrat during 19-21 Jan 2019. (Abstr.).
60. Bhaskar R, Sahoo B, **Gupta MK***. 2019. Development and characterization of alginate-based macroporous 3-D scaffold for testicular tissue engineering application. Proceedings of the Global Conference on Reproductive Health with Focus on Occupational, Environmental & Lifestyle Factors along with the 29th Annual Meeting of the Indian Society for the Study of Reproduction and Fertility (ISSRF) held at JNU, New Delhi during 22-24th Feb 2019. Pg.: 192. (Abstr.)

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167. Han SY, **Gupta MK**, Uhm SJ, Lee HT*. 2008. Identification, isolation and in vitro long term culture of male germline stem cell in porcine. *Reproduction in Domestic Animals*. 43: 164. (Abstr.) [SCI]

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219. **Gupta MK**, Uhm SJ, Lee HT*. 2005. Porcine somatic cell nuclear transfer by whole cell intracytoplasmic injection or electrofusion. *Proceedings of the 31st Conference of Korean Society of Animal Reproduction (KSAR), Seoul, South Korea, Pg 86*. (Abstr.)
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cell nuclear transfer. Proceedings of the 31st Conference of Korean Society of Animal Reproduction (KSAR), Seoul, South Korea, Pg 84. (Abstr.)

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222. Han DW, Im YB, **Gupta MK**, Uhm SJ, Lee HT*. 2005. Methylation status of putative DMRs of porcine IGR2-H19 genes. *Biology of Reproduction*. 73 Suppl: 234. (Abstr.) [SCI]

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Year 2003:

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226. **Gupta MK**, Sridevi P*. 2003. Care and Management of Post-partum bitches. *Pet India* 7:48-54.

Books and Book Chapters

Books:

1. Sharma N, **Gupta MK**, Dwivedi DK (Eds.). 2021. Emerging concepts in veterinary and animal sciences. Narendra Publishing House, Delhi, India. ISBN: 978-81-94726-96-8.

Book Chapters:

2. Kumar P, Jha DK, Bhaskar R, **Gupta MK***. 2022. Hematopoietic cell transplantation: Sources of cells, storage and transplantation. In. Qamar I and Maurya PK. Cardiovascular toxicity and therapeutic modalities targeting cardio-oncology: From basic research to advanced study. Elsevier Inc. USA. Chapter 13. Pg. 229-255. DOI: 10.1016/B978-0-323-90461-2.00007-9. ISBN: 978-032-39-0461-2.

3. Patra T, Bhaskar R, **Gupta MK***. 2022. Cryopreservation of testicular stem cells and its application in veterinary science. In: Choudhary R and Choudhary S (Ed.). *Stem Cells in Veterinary Science*. Springer Nature, Singapore. Chapter 9. Pg. 161-182. DOI: 10.1007/978-981-16-3464-2. ISBN: 978-981-16-3463-5 (Hardcover); 978-981-16-3464-2 (eBook).

4. Pathak D, Kapoor K, **Gupta MK***. 2022. Testicular stem cell niche. In: Choudhary R and Choudhary S (Ed.). *Stem Cells in Veterinary Science*. Springer Nature, Singapore. Chapter 10, Pg. 125-159. DOI: 10.1007/978-981-16-3464-2. ISBN: 978-981-16-3463-5 (Hardcover); 978-981-16-3464-2 (eBook).
5. Bhaskar R, Mishra B, **Gupta MK***. 2021. Engineering biomaterials for testicular tissue engineering and in vitro spermatogenesis. Sheikh FA (Ed.). *Engineering materials for stem cell regeneration*. Springer Nature, Singapore. Chapter 10. Pg. 237-249. DOI: 10.1007/978-981-16-4420-7; ISBN: 978-981-16-4419-1 (Hardcover); 978-981-16-4420-7 (eBook).
6. Pushp P, **Gupta MK***. 2021. Cardiac Tissue Engineering: Stem Cell Sources, Synthetic Biomaterials and Scaffold Fabrication Methods, Sheikh FA (Ed.). *Engineering materials for stem cell regeneration*. Springer Nature, Singapore. Chapter 11. Pg. 251- 280. DOI: 10.1007/978-981-16-4420-7; ISBN: 978-981-16-4419-1 (Hardcover); 978-981-16-4420-7 (eBook)
7. Pushp P, **Gupta MK***. 2021. Cardiac tissue engineering: a role for natural biomaterials. In: Pal DK, Nayak AK (Eds.). *Bioactive Natural Products for Pharmaceutical Applications*. Springer Nature, Switzerland. Chapter 18. Pg. 617-642. DOI: 10.1007/978-3-030-54027-2_18. ISBN: 978-3-030-54026-5; 978-3-030-54027-2 (e-Book)
8. Bhaskar R, **Gupta MK***. 2020. Testicular Tissue Engineering: An Emerging Solution for In Vitro Spermatogenesis. In: Pal K, Banerjee I, Sarkar P, Kim D, Deng WP, Dubey NK, Majumder K (Eds.). *Biopolymer-Based Formulations: Biomedical and Food Applications*. Elsevier, USA. Edition 1. Chapter 33. Pg: 835-858. DOI: 10.1016/C2018-0-01614-X. ISBN: 978-0-12816-897.
9. Dhupal M, **Gupta MK**, Tripathy DR, Kumar M, Yi DK, Nanda SS, Chowdhury, D. 2019. Recent Advances in Pharmaceutical Applications of Natural Carbohydrate Polymer Gum Tragacanth. In: Nayak AK, Hasnain S, Pal DK (Eds.). *Natural Polymers for Pharmaceutical Applications*. Apple Academic Press (Taylor & Francis Group), USA. Volume 1, Chapter 3. Pg: 49-86. ISBN: 9781771888448 (Print); 9780429328121 (E-Book).
10. Guttula PK, **Gupta MK***. Design and Development of Small Molecules for Somatic, Stem Cell Reprogramming and Therapy. In: Shaik N, Hakkem K, Banaganapalli B, Elango R (Eds.) *Essentials of Bioinformatics*, Springer, USA. Vol II. Chapter 10. Pg. 167-183. DOI: 10.1007/978-3-030-18375-2_10. ISBN: 978-3-030-18374-5 (Print); 978-3-030-18374-2 (Online).
11. Sharma S, Ahmed R, Syed ZH, **Gupta MK***. 2019. Recent molecular diagnostic test for metabolic disorders of small ruminants. In. Sharma RK, Pathak AK, Risam KS (Eds.). *Recent trends in nutrition and disease management in sheep and goats*.

Published by Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu (SKAUST-J). Pg. 88-91. ISBN: 978-93-5351-334-4

12. Pushp P, Kaur R, Lee HT, **Gupta MK***. 2013. Nanoparticles for gene delivery into stem cells and embryos. In Dutta PK and Dutta J (Eds.). *Advances in Polymer Science: Multifaced development and applications in biopolymers towards biology, biomedical and nanotechnology*. Springer, USA. 254:51-86. ISBN: 978-3-642-40122-0.
13. **Gupta MK***, Lee HT. 2012. Differences between multipotent adult germline stem cells and germline stem cells for microRNA. In Hayat MA (Ed.). *Stem cells and Cancer Stem Cells: therapeutic applications in disease and injury*, Volume 6. Springer, USA. 6:113-129. ISBN: 978-94-007-1708-4.
14. **Gupta MK**, Jung JW, Lee HT, Kim KP*. 2011. Proteomic analysis of embryos for global peptide sequencing, identification and quantification of multiple proteins. In Steiger SP (Ed.). *In Vitro Fertilization*, NOVA Publishers, USA. Pg. 109-122. ISBN: 978-1-61209-961-3.
15. **Gupta MK.**, Lee HT*. 2011. Testis-derived male germ-line stem cells for assisted reproductive technologies. In Steiger SP (Ed.). *In Vitro Fertilization*, NOVA Publishers, USA. Pg. 131-163. ISBN: 978-1-61209-961-3.

Theses:

16. **Gupta MK.** 2007. Production of cloned minipig embryos by interbreed somatic cell nuclear transfer. PhD thesis submitted to KonkukUniversity, Seoul, South Korea. Supervisor: Prof. Hoon Taek Lee.
17. **Gupta MK.** 2003. In vitro production and sexing of pre-implantation of buffalo embryos. MVSc thesis submitted to TamilNadu Veterinary and Animal Sciences (TANUVAS) University, Chennai, India. Supervisor: Prof. S. Balasubramanian.

Products/ Technologies Available for Commercialization

1. PUSHP: Ready-to-use PVA-PVP based patches for wound dressing and tissue engineering applications.
2. VITRI: mSSV Vitrification Kits for vitrification of mammalian cells, tissues, oocyte and embryos.
3. ASISH: A diagnostic kit for rapid screening for leukemia predisposal.
4. SAWAN: A diagnostic kit for rapid assessment of DNA fragmentation in sperm.
5. RAUNAK: A user-friendly GUI for bioinformatics workstation and management of bioinformatics center.
6. TRACE: A software for tracing stem cell niche and lineage.

Sponsored Research Projects

Sponsored Research Projects as Principle Investigator (PI) / Lead Scientist:

- 1) **Title** : Exploiting allo- or xeno- geneic decellularized tissue matrix for developing an in vitro spermatogenesis system for restoration of male fertility
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India
Amount : Rs. 31,31,000
Duration : 3 Years. Accepted on 30.03.2022.
Co-workers : Prof. D. Verma (Co-I)

- 2) **Title** : Unfolding newer therapeutic strategies for identifying significant biomarkers for human mastitis through multi-omics and big data analysis
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India
Amount : Rs. 15,00,000
Duration : Three Years (Ongoing)
Co-workers : Dr. Pradeep N (RA)

- 3) **Title** : Establishment of Bioinformatics and Computational Biology Center:
Animal Bioinformatics
Funding Agency : Department of Biotechnology (DBT), Govt. of India.
Amount : Rs. 74,70,000
Duration : Five Years (Mar. 2021 - Mar. 2026)
Co-workers : Prof. PK Sa (Co-PI)

- 4) **Title** : FIST Program to strengthen the post-graduate teaching and research facilities
Funding Agency : Department of Science and Technology (DST), Govt. of India.
Amount : Rs. 1,15,00,000
Duration : Five Years (Jan. 2018 - Jan. 2023)
Co-workers : -

- 5) **Title** : Design and fabrication of 3D scaffolds and tissue engineered testicular construct for in vitro spermatogenesis
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India.

- Amount** : Rs. 13,56,000
Duration : Three Years (May 2018 - May 2021)
Co-workers : Dr. Rakesh Bhaskar (RA)
- 6) **Title** : In Vitro Spermatogenesis from Cryopreserved Testicular Tissue for Restoration of Fertility in Males
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India.
Amount : Rs. 9,50,400
Duration : Two Years (May 2019 - May 2021)
Co-workers : Tanushree Patra (SRF)
- 7) **Title** : Development of a point-of-care diagnostic kit for detection of bacteria in biological fluids
Funding Agency : TEQIP-III, MoE-NPIU
Amount : Rs. 2,00,000
Duration : One Year (Dec. 2019 - Mar. 2021)
Co-workers : Nil
- 8) **Title** : Molecular mechanism of pluripotency in testicular stem cells – an in silico approach
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India.
Amount : Rs. 7,12,000
Duration : Two Years (Nov. 2018 - Nov. 2020)
Co-workers : Praveen Kumar Guttula (SRF)
- 9) **Title** : Creation of Bioinformatics Infrastructure Facility (BIF) for the promotion of biology teaching through bioinformatics (BTBI) scheme of BITSnet.
Funding Agency : Department of Biotechnology (DBT), Govt. of India.
Amount : Rs. 1,13,77,420
Duration : 6 + 5 Years. (April 2006 - Mar. 2017)
Co-workers : -
- 10) **Title** : Analysis of spermatozoal RNA and its functional relevance to fertility.
Funding Agency : Council of Scientific and Industrial Research (CSIR), Govt. of India.

- Amount** : Rs. 11,50,000
Duration : Three Years (Jan. 2015 - Dec. 2017)
Co-workers : -
- 11) Title** : In vitro spermatogenesis as a method to bypass pre- and post-meiotic barriers to spermatogenic process and restoration of fertility.
Funding Agency : Indian Council of Medical Research (ICMR), Govt. of India.
Amount : Rs. 33,79,388
Duration : Three Years. (Mar. 2015 - Mar. 2018)
Co-workers : -
- 12) Title** : Testicular stem cell-mediated transgenesis for production of granulocyte colony stimulating factor (G-CSF).
Funding Agency : Department of Biotechnology (DBT), Govt. of India.
Amount : Rs. 63,83,400.
Duration : Three Years (Aug. 2014 - Aug. 2017)
Co-workers : Prof. LB Singh (Co-PI).
- 13) Title** : Vitrication of cattle oocytes using a newly characterized and fabricated biodegradable nanoporous mat.
Funding Agency : UTAR Research Fund (UTARRF), Malaysia
Amount : RM 9,95,000 (One Year).
Duration : One Year (Completed: 2014-2015)
Co-workers : Prof. Kwong Phek Jin (Malaysia), Prof. Nor Ismaliza Binti Mohd Ismail (Malaysia).
- 14) Title** : Using testicular cells and cellular components for enhancing the development potential of cloned embryos.
Funding Agency : Rural Development Administration (RDA), Govt. of South Korea.
Amount : KRW 400,000,000 (~Rs. 160,00,000).
Duration : June 2011 – May 2015.
Co-workers : None. Transferred to another PI upon joining NIT Rourkela, India.
- 15) Title** : Observation and analysis of developmental process of cloned fetus in pregnant sows.
Funding Agency : Rural Development Administration (RDA), Govt. of South Korea.

Amount : KRW 250,000,000 (~Rs. 100,00,000).

Duration : April 2007 – Dec. 2011.

Co-workers : Prof. Sang Jun Uhm (Co-PI).

16) Title : Role of Mitochondrial Genome in Oocytes.

Funding Agency : Institute of Biomedical Science and Technology (IBST), South Korea.

Amount : KRW 45,000,000 (~Rs. 180,00,000).

Duration : July 2007 – June 2010.

Co-workers : None.

Sponsored Research Projects as Co-Principle Investigator (Co-PI):

1) Title : Development of an injectable hemostatic device for non-compressible haemorrhage.

Funding Agency : Department of Health Research (DHR), Govt. of India

Amount : Rs. 47,12,000

Duration : 3 Years (Approved)

Co-workers : Prof. Devendra Verma (PI)

2) Title : Fast clotting clinical grade hemostatic agent for emergency care

Funding Agency : IMPRINT, Govt. of India.

Amount : Rs. 65,06,000

Duration : Three Years (Sep. 2018 - Sep. 2021)

Co-workers : Prof. D Verma (PI), Prof. RK Choudhary (GADVASU), Prof. D Pathak (GADVASU)

3) Title : Creation of Center of Excellence (CoE) in Orthopaedic Tissue Engineering and Rehabilitation.

Funding Agency : Technical Education Quality Improvement Programme (TEQIP) Phase-II (Sub-component 1.2.1).

Amount : Rs. 500,00,000

Duration : 5 Years (Ongoing)

Co-workers : Prof. K Pramanik (Coordinator & PI), Prof. SK Sarangi, Prof. S Panda, Prof. DP Mohapatra, Prof. BC Ray, Prof. A Thirugnanam, Prof. A Biswas, Prof. S Dasgupta, Prof. SS Ray, Prof. I Banerjee,

Prof. K Pal.

- 4) **Title** : Maintenance and management of gnotobiotic minipigs for xenotransplantation.
Funding Agency : Ministry of Education, Science and Technology, Govt. of South Korea.
Amount : KRW 555,000,000 (~Rs. 222,00,000).
Duration : July 2009 – May 2012.
Co-workers : Prof. Hoon Taek Lee (PI).
- 5) **Title** : Production of Alpha Gal Knock-out Gnotobiotic minipig.
Funding Agency : Ministry of Education, Science and Technology, Govt. of South Korea.
Amount : KRW 800,000,000 (~Rs. 320,00,000).
Duration : July 2008 – June 2009.
Co-workers : Prof. Jin-Hoi Kim (PI).
- 6) **Title** : Animal Biotechnology Frontier Project.
Funding Agency : Ministry of Education, Science and Technology, Govt. of South Korea.
Amount : KRW 4,811,500,000 (~Rs. 1924,60,000).
Duration : Aug. 2007 – Feb. 2009.
Co-workers : Dept. of Animal Biotechnology, Konkuk University (PI: Prof. Hoon Taek Lee).
- 7) **Title** : Establishment of stable cell lines to be used as donor cell for nuclear transfer for production of transgenic SPF pigs.
Funding Agency : Ministry of Agriculture and Forestry, Govt. of South Korea.
Amount : KRW 200,000,000 (~Rs. 80,00,000).
Duration : April 2007 – Dec. 2007.
Co-workers : Prof. Hoon Taek Lee (PI).
- 8) **Title** : Development of transgenic pigs producing a hematopoietic growth factor (G-CSF).
Funding Agency : Ministry of Agriculture and Forestry, Govt. of South Korea.
Amount : KRW 100,000,000 (~Rs. 40,00,000).

Duration : Jan. 2007 – Dec. 2007.
Co-workers : Prof. Hoon Taek Lee (PI).

Invited Lectures/ Presentations at Meetings, Conferences & Symposia

1. Filing and Managing Intellectual Property Rights in Academic Environment: Indian Context. IEEE R10 Talk Series, Kolkata, 14 May 2022 (Online). (*Resource Person*).
2. Intellectual Property Right Management: An Overview. Continuing Education Program on Research Methodology in Engineering: A Practical Insight for Researchers. National Institute of Technology Rourkela, 24.07.2022. (*Resource Person*).
3. Transgenic chicken as bioreactor for producing pharmaceutical proteins. The XXIX conference of the Indian Association for the Advancement of Veterinary Research (IAAVR) and National Symposium held during 08-09 April 2022. (*Keynote Speaker*)
4. Metagenomics. Continue Biotechnology Education Lecture (CBE) series. DBT/Wellcome Trust India Alliance, New Delhi. 23 March 2022 (Online). (*Resource Person*).
5. IPR in Biotechnology: An Overview. National workshop on intellectual property rights (IPR), New Delhi, 24.02.2022 (Online). (*Resource Person*).
6. Stem cell-mediated transgenesis for production of pharmaceutical proteins. Karunya Institute of Technology and Sciences, Coimbatore. 08.11.2021 (Online). (*Special Lecture*)
7. Animal cloning by somatic cell nuclear transfer (SCNT). International training course on “Biotechnological approaches in animal research and disease diagnosis” held at College of Animal Biotechnology, Guru Angad Dev Veterinary and Animal Sciences University (GADVASU), Ludhiana on 06 Feb. 2021 (Online). (*Resource Person*)
8. Newer strategies for improving the productivity of industrial proteins: Molecular Phylogeny. FDP on Applications of Computational Techniques in Chemical Engineering and Biotechnology held at PVP Institute of Technology, Budhgaon, Maharashtra on 21 Jan. 2021 (Online). (*Resource Person*)
9. Newer approaches for pharmaceutical protein production in transgenic animals. The 8th Bihar Science Congress held at Patna University during 03-05 December 2020 (Online). (*Keynote Speaker*)
10. Co-expression of recombinant hSCF for improved bioactivity of hG-CSF. The 7th Bihar Science Congress held at Patna during 04-06 Dec 2018.
11. Spermatozoal RNA and its relevance to male infertility. National Conference on Enhancing New Innovation and Challenges in Nano, Chemical and Biological

Sciences – 2018 (EICNCBS-2018) held at Chaibasa, Jharkhand during 16-18th Feb 2018. (*Invited Lecture*)

12. Stem cell therapy: a computational perspective. Special lecture in the Annual meeting of the Computer Society of India, Rourkela Chapter. Rourkela, India. 29 Feb 2016. (*Special Lecture*)
13. Biological reference database and data mining. Short-term training program on Applications of Bioinformatics in Biotechnology (ABB-2016), Bioinformatics Infrastructure Facility, Department of Biotechnology & Medical Engineering, National Institute of Technology, Rourkela, India. 17-21 Feb, 2016. (*Resource Person*)
14. Bioinformatic resources and databases. Short-term training program on Applications of Bioinformatics in Biotechnology (ABB-2016), Bioinformatics Infrastructure Facility, Department of Biotechnology & Medical Engineering, National Institute of Technology, Rourkela, India. 17-21 Feb, 2016. (*Resource Person*)
15. Personal reference library and data mining. National Workshop on “Applications of Bioinformatics on Genomics and Proteomics”, Fakir Mohan University, Balasore, India. Dec 01-02, 2015. (*Resource Person*)
16. Spermatozoal RNA and male infertility. The 6th Bihar Science Congress, Patna University, Patna, India. 23-25 Dec, 2014. (*Key Note Speaker*).
17. Computer Aided Drug Design and Discovery in the “OMICS” era. Workshop on Advances in Computer Aided Drug Design and Discovery (ACAD-2014), Bioinformatics Infrastructure Facility, Department of Biotechnology & Medical Engineering, National Institute of Technology, Rourkela, India. Sep 12-13, 2014.
18. Transgenic chicken as a bioreactor for producing the proteins of pharmaceutical importance. Pre-Conference of the 2nd International Conference on Animal and Dairy Sciences, Sher-e-Kashmir University, Jammu, India. August 20, 2014. (*Key Note Speaker*).
19. A teacher’s story: My personal journey to the classroom. Faculty Development Programme in “Pedagogy and E-Learning Technology”, National Institute of Technology, Rourkela, India. July 1-5, 2014. (Special Lecture delivered on July 3, 2014).
20. MicroRNA signatures in testes-derived male germ-line stem cells. International Conference on Frontier Discoveries and Emerging Opportunities in Life Sciences (FDEOLS), Sagar Central University, India, February 13-15, 2014. (*Key Note Speaker*).
21. Bio-industry in India. Special lecture at Konkuk University, South Korea. Oct 11, 2013. (*Invited Presentation*).

22. Bio-industry in India. Special lecture at Chungbuk National University, South Korea. Oct 11, 2013. (Invited Presentation). Oct 15, 2013. (Invited Presentation).
23. Sperm: not just a carrier of father's DNA. The 10th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Vietnam, August 19-25, 2013. (*Invited Speaker*)
24. Role of spermatozoal RNA during early embryogenesis. The 9th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Philippines, October 23-28, 2012. (*Invited Speaker*)
25. Booming stem cell biotechnology and tissue engineering in India. Special lecture at Bio-Organ Research Center, Konkuk University, Seoul, South Korea. Feb 22, 2012. (*Invited Speaker*)
26. Skin- and testes-derived stem cells for tissue engineering. Special lecture at Sangji Youngseo College, Wonju, South Korea. Feb 24, 2012. (*Invited Speaker*)
27. Nanoparticles for gene delivery into stem cells and embryos. Special lecture at Motilal Nehru National Institute of Technology (MN-NIT), Allahabad, India. April 19, 2012. (*Invited Speaker*)
28. Epigenetic modifications in testes-derived male germ-line stem cells. The 8th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Guilin, China, October 25-28, 2011. (*Invited Speaker*)
29. Involvement of Autophagy in regulating meiotic progression of porcine oocytes. The 7th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), KL, Malaysia, November 8-10, 2010. (*Invited Speaker*)
30. Cloning, transgenesis and stem cells: engineering the medical needs. Special lecture in Shri Mata Vaishno Devi University, Jammu, India. May 19, 2010. (*Invited Presentation*)
31. Vitrification, cloning and embryo biotechnology. Special lecture in Animal Biotechnology Embryo Laboratory (ABEL), University of Malaya, KL, Malaysia, March, 2010. (*Invited Presentation*)
32. New approaches to produce genetically modified pig embryos. The 2009 Seoul Forum on Xenotransplantation, Seoul, South Korea, November 21, 2009. (*Invited Speaker*)
33. Simultaneous detection and quantification of multiple proteins in porcine embryos: a proteomic approach. The 6th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Cambodia, November 16-20, 2009. (*Invited Speaker*)

34. Reproductive biotechnology in South Korea. Special lecture in Magadh University, Patna, India. January 15-22, 2009. (*Invited Presentation*)
35. Ultrarapid vitrification of oocytes and embryos. The 5th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Kunming, Yunnan Province, China, November 27-29, 2008. (*Invited Speaker*)
36. Recent advances in vitrification of oocytes and embryos. The 8th International Symposium on Developmental Biotechnology, Seoul, South Korea, October 24, 2008. (*Invited Speaker*)
37. Vitrification of oocytes and embryos. Cryobanking of animal genetic resources 2008 conference, Taipei, Taiwan, September 15-19, 2008. (*Invited Speaker*)
38. Role of histone acetylation in nuclear reprogramming of cloned embryos. The 4th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Singapore, November 24-26, 2007. (*Invited Speaker*)
39. Multiple selected reaction monitoring: as a tool for quantification of proteins in porcine Embryos. The 4th Annual conference of the Asian Reproductive Biotechnology Society (ARBS), Singapore, November 24-26, 2007. (*Invited Speaker*)
40. Embryo proteomics: What it has got to offer? The 2007 international symposium of Research Center for Transgenic Cloned Pigs (RCTCP), Daejeon, South Korea, September 6, 2007. (*Invited Speaker*)
41. Global peptide sequencing and quantification of proteins in porcine parthenotes by proteomics. The 33rd Annual conference of the International Embryo Transfer Society (IETS), Kyoto, Japan, January 7-9, 2007.
42. Solid surface vitrification of porcine embryos: A new approach of gamete cryopreservation. The 32th Annual conference of the International Embryo Transfer Society (IETS), Florida, USA, January, 8-10, 2006.
43. Phytohemagglutinin improves the yield and quality of porcine parthenotes produced *in vitro*. The 38th Annual conference of Society for the Study of Reproduction (SSR), Quebec, Canada, July, 24-27, 2005.
44. Induction of improvement in porcine preimplantation embryo development and quality by use of a plant-derived lectin. The 30th conference of Korean Society of Animal Reproduction (KSAR), Seoul, South Korea, June, 17-18, 2005.
45. Embryo transfer technology- advantages and applications. The XIX Annual convention of Indian Society for Study of Animal Reproduction (ISSAR) and National Symposium on "Current Reproductive Technologies for Improvement of Livestock Production in India", Kolkata, India, Aug. 22-24, 2003.

Fellow / Membership of Professional Society/Bodies/Academies

1. Fellow, National Academy of Agricultural Sciences (FNAAS), India. (NAAS/II.51/21; Since 01.01.2022).
2. Fellow, National Academy of Dairy Sciences (FNADS), India. (Since 25 July 2022).
3. Fellow, Indian Association for Advancement of Veterinary Research. (FIAAVR), India. (Since 19.03.2022).
4. Associate Fellow, National Academy of Veterinary Sciences (NAVS), India. (Since 14.05.2022).
5. Fellow, Royal Society of Biology (FRBS), UK. (P0140199; Since 01.10.2020).
6. Fellow, Society for Applied Biotechnology (FSAB), India. (F21/2013; Since 09.10.2013).
7. Fellow, Academy of Environment and Life Sciences (FAELS), India. (FAELS-52; Since Oct 2013).
8. Executive Member, External Relations Committee, Council of Asian Science Editors, Council for Advancement and Support of Education (CASE), USA. (2014).
9. Executive Member, HERITAGE Network, France (2017).
10. Scientific Steering Committee Member, Asian Reproductive Biotechnology Society (ARBS), Japan. (Since 2012).
11. Life Member, National Environmental Science Academy (NESA), India. (L/M 2357; Since 22.12.2021)
12. Member, IEEE Engineering in Medicine and Biology Society, USA. (ID: 94828860; Since 15 Jan 2021).
13. Member, Society for Cryobiology, USA. (ID: 19000011; Since 26 Feb 2019).
14. Life Member, Association of Mastitis, India. (Since Oct 2020). (AOM/LM/21/2020; Since Oct 2020).
15. Life Member, Laboratory Animal Scientists' Association (LASA), India. (I-712; Since 12.04.2019).
16. Life Member, Biomedical Engineering Society of India (BMESI), India. (LM-1074; Since 16.10.2013).
17. Life Member, Biotech Research Society (BRS), India. (LM-1580; Since 14.01.2014).
18. Life Member, Society for Tissue Engineering and Regenerative Medicine, India (STERMi). (LM-98; Since 14.10.2013).

19. Life Member, Society of Biological Chemists (SBC), India. (LM-3409; Since 30.10.2014).
20. Life Member, Society for Reproductive Biology and Comparative Endocrinology (SRBCE), India. (LM-436; Since 30.10.2014).
21. Life Member, Society of Biological Scientists of India (SOBSI), India. (Since 30.10.2014).
22. Life Member, Indian Society of Cell Biology (ISCB), India. (LM-5824; Since 30.10.2014).
23. Life Member, Society for Veterinary Sciences and Biotechnology (SVSBT), India. (56/SVSBT/2015; Since 10.02.2015).
24. Life Member, Indian Association for the Advancement of Veterinary Research (MIAAVR), India. (M-77; Since 11.10.2013).
25. Life Member, Indian Society for Study of Reproduction and Fertility (ISSRF), India (LM-1182; Since 25.06.2014).
26. Life Member, Asian Reproductive Biotechnology Society (ARBS), Japan. (Since 2007).
27. Member (Senior), Asia-Pacific Chemical, Biological and Environmental Engineering Society (CBEES), Hong Kong. (Since Oct 2013).
28. Member, Asia Pacific Initiative on Reproduction (ASPIRE), Singapore. (Since 05.03.2014)
29. Member, Adult Stem Cells Foundation (ASCF), USA.
30. Life Member, Indian Society for Study of Animal Reproduction (ISSAR), India.
31. Life Member, Society of Krishi Vigyan, India (Since 2012).
32. Life Member, The Indian Science Congress Association (ISCA), India (Since 2012).
33. Executive Member, Bihar Foundation, South Korea Chapter , 2007.

Editorial/ Reviewing Activities

1. Adhoc Reviewer for sponsored research proposals to Department of Biotechnology (DBT), Ministry of Science & Technology, Govt. of India.
2. Adhoc Reviewer for sponsored research proposals to Department of Science and Technology (DST), Ministry of Science & Technology, Govt. of India.
3. Adhoc Reviewer for sponsored research proposals to Science and Engineering Research Board (SERB), Ministry of Science & Technology, Govt. of India.

4. Associate Editor (Livestock Genomics), *Frontiers in Genetics*. (SCI; NAAS Rating: 10.60; NAAS Journal ID: F086; ISSN: 1664-8021) (Since 22.02.2022)
5. Associate Editor (Livestock Genomics), *Frontiers in Veterinary Science*. (SCI; NAAS Rating: 9.41; NAAS Journal ID: F094; ISSN: 2297-1769)
6. Associate Editor (Biotechnology and Bioinformatics), *Manthan (Journal)*, 2015 (ISSN: 0974-6331).
7. Editorial Board Member, *Indian Journal of Veterinary Science and Biotechnology*, 2015 (NAAS Rating: 5.58; NAAS Journal ID: T032; ISSN: 2394-0247)
8. Editorial Board Member, *Journal of Animal Research*, 2011 (NAAS Rating: 5.43; NAAS Journal ID: J049; ISSN: 2249-6629)
9. Editorial Board Member, *Journal of Krishi Vigyan*, 2012 (NAAS Rating: 4.55; NAAS Journal ID: J322; ISSN: 2319-6432)
10. Editorial Board Member, *Progress and Communication in Science (Journal)*, 2013 (ISSN: 2288-7113)
11. Editorial Board Member, *Journal of Biological Sciences*. (NAAS Journal ID: J109; ISSN: 1727-3048) (Past: 2007-2012)
12. Editorial Board Member, *International Journal of Zoological Research (Past: 2007-2012)*
13. Editorial Board Member, *Asian Journal of Developmental Biology (Past: 2007-2012)*
14. Editorial Board Member, *International Journal of Agricultural Research (Past: 2007-2012)*
15. Editorial Board Member, *Asian Journal of Animal and Veterinary Advances (Past: 2007-2012)*
16. Editorial Board Member, *ISRN Developmental Biology (Past: 2012-2014)*
17. Editorial Board Member, *The Open Gene Therapy Journal (Past: 2013-2015)*
18. Adhoc Reviewer for several SCI Journals such as: *Biochemistry and Cell Biology, Cell Reports, Materials Chemistry and Physics, BioTechniques, Cell and Tissue Research, Medical Bioinformatics Unlocked, Journal of Biomolecular Structure & Dynamics, Medical Science Monitor, Tissue Engineering, Biomaterials, Polymer Testing, Biopolymers, European Polymer Journal, Scientific Reports, Theriogenology, Reproduction, BMC Developmental Biology, Journal of Animal Science and Biotechnology, DNA and Cell Biology, Physiological Genomics, Cloning Stem Cells / Cellular Reprogramming, Reproduction, Fertility and Development, Reproduction in Domestic Animals, Animal Reproduction Science, Reproductive Biology, Journal of Animal Science and Biotechnology, DNA and Cell Biology, Poultry Science,*

Reproductive Toxicology, Molecular Human Reproduction, International Journal of Molecular Sciences, Life Science, Folia Histochemica et Cytobiologica, African Journal of Biotechnology, Analytical Methods, BioCell, Asian-Australasian Journal of Animal Sciences, Indian Journal of Animal Sciences, Oxidative Medicine and Cellular Longevity, Journal of Animal Breeding and Genetics, Biotechnology Journal, Tissue and Cell, Korean Journal of Animal Genetics, International Journal of Dairy Science, Pharmaceutical Nanotechnology, Indian Journal of Biotechnology, Journal of Animal Research etc.

Other Professional and Administrative Activities

1. Subject Expert, AICE-JRF/SRF (PhD) Examination for Veterinary and Animal Sciences – IV, 2022. National Testing Agency.
2. Chairman, Departmental Academic Oversight Committee, Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela, India. (Since 01.07.2018).
3. Chairman, Departmental Academic Committee (UG and PG), Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela, India. (01.07.2012 – 30.06.2018).
4. Member, Curriculum Development Committee (UG and PG), Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela, India. (Jan 2014 - – 30.06.2015).
5. Faculty Advisor, B.Tech (Biotechnology), National Institute of Technology, Rourkela, India (Session 2012-2016).
6. In-Charge (Along with Prof. Bismita Nayak, LS), Central Animal House, National Institute of Technology, Rourkela, India (Since 01.01.2012).
7. External Examiner for PhD thesis, Motilal Nehru National Institute of Technology, Allahabad, India
8. External Examiner for PhD thesis, National Institute of Technology, Raipur, India.
9. Team leader, Bio-Organ Research Center, Konkuk University, Seoul, South Korea. (Year 2007-2011)
10. International collaborator for Establishment of MOU between Delhi University, India and Konkuk University, South Korea (Year 2008)
11. International collaborator for Establishment of MOU between Magadh University, India and Konkuk University, South Korea (Year 2008)
12. External examiner for PhD thesis, Institute of Biological Sciences, Faculty of Science, University of Malaya, KL, Malaysia. (Year 2010-2011).
13. Chairman, Departmental Academic Committee, BM Department (01.07.2015 – 30.06.2018).

14. Chairman, Departmental Research Committee, BM Department (01.07.2015 – 30.06.2018).
15. Chairman, Departmental Academic Oversight Committee, BM Department (01.07.2015 – 30.06.2018).
16. Faculty Advisor, B.Tech (Biotechnology), Batch 2012-2016.
17. Chairman, Departmental Purchase Committee, BM Department (01.07. 2012-30.06.2015).
18. Chairman, Departmental Academic Committee (UG and PG), BM Department (01.07. 2012 – 30.06.2014).
19. Member, Departmental Research Committee (PIC- PG progress), BM Department (July 2019 – June 2021).
20. Member, Department Academic Program Oversight Committee (DAPOC), BM Department (July 2019 – June 2021).
21. Member, Departmental Academic Committee (UG and PG), BM Department (July 2019 – June 2021).
22. Member, Departmental Academic Program Oversight Committee (DAPOC), BM Department (01.07. 2014-30.06.2015).
23. Member, Departmental Research Committee, BM Department (01.07. 2012 – 30.06.2014).
24. Member, Departmental Purchase Committee, BM Department (01.07. 2012 – 30.06.2014).
25. Library In-Charge, BM Department (01.07. 2012 – 30.06.2014).
26. Professor-In-Charge (PIC), Bioinformatics Infrastructure Facility, BM Department (Since 13.03. 2013).

Personal Information

Nationality	: Indian
Religion	: Hindu
Marital Status	: Married
Languages Known	: English, Hindi, Tamil, Hangul (Korean), Bangla, Marwari and allied
Hobbies	: Books, Gardening, Cloud watching
Countries Visited	: USA, Canada, Japan, China, Vietnam, Portugal, Poland, South Korea, Philippines, The Netherlands, Malaysia, France, Hungary, Singapore, Taiwan, Hong Kong, Thailand, Cambodia etc.