

Instruction to the candidates

Applications for Admission into M.Sc. Biotechnology (through GAT-B score) course for the Session 2023-24.

Applications are invited from valid GAT-B rank card holders (as per the recent notification of RCB, DBT, Govt. of India) for admission into **M.Sc. Biotechnology** programme of Utkal University, under DBT, Govt. of India support, for the session 2023-24. Candidates are advised to download the application form from the University website (www.utkaluniversity.ac.in) and the filled-in application form with scanned copies of all supporting documents should be e-mailed to the Head of the Department, Dept. of Biotechnology (Email: hodbiotechnology@utkaluniversity.ac.in) by **13th July 2023 by 2400 hours**. Incomplete applications and the applications received after the deadline will be rejected. For any queries, contact Prof. J. Dandapat (Email: jd.biotech@utkaluniversity.ac.in; M: +91-9437466087), Dr. Jyotsnarani Pradhan (Email: jyotsna.biotech@utkaluniversity.ac.in; M: +91-9853411916) and Dr. Sanatan Majhi (Email: sanatan.biotech@utkaluniversity.ac.in; M: +91-9337940244, 8280547988). Additional information regarding the number of seats, Eligibility criteria and course fees details are given below:

INTAKE CAPACITY

- **25 Seats** (Reservation of SC/ST/OBC/ EWS applicable as per GOI rules)

ELIGIBILITY CRITERIA

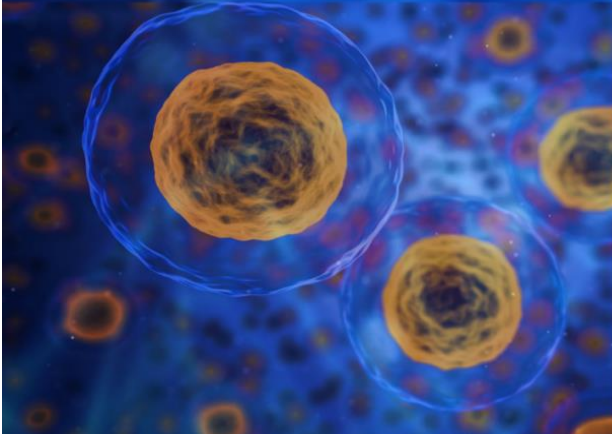
- Bachelor's Degree in Science stream with subjects like Biotechnology / Zoology/ Botany/ Microbiology/ Biochemistry/ Physiology /Genetics/Molecular Biology/ /Bioinformatics/Physics / Biophysics/ Chemistry /Mathematics with 55% marks in aggregate/equivalent grade score for general category and relaxation for reserved category as per Govt. of India rules.
- Graduates with any of the above discipline must have Biology as one of the subjects in +2 level.

COURSE FEES: Rs. 8, 500/- per Semester

ADMISSION FEES: Rs. 4394/- per year for Female students and Rs. 4562/- per year for Male students



Department
of
BIOTECHNOLOGY



DEPARTMENT AT A GLANCE

Department of Biotechnology

(Supported by Department of Biotechnology, Govt. of India)



Pioneers of the Biotechnology Department

Prof. S.P. Adhikary, Former Professor, Departments of Biotechnology, Utkal University & Vice-Chancellor, Fakir Mohan University felicitating G.B.N. Chainy, FNSC, Former Founder Professor and Head Departments of Biotechnology, Utkal University

Vision:

To be the Centre of Excellence in teaching, research and skill development in the area of Biotechnology

Mission:

To nurture, mentor and train young talents with the latest tools and techniques in Biotechnology for providing global competence

Faculty Members

Professor	: Prof. Jagdishwar Dandapat (HOD)
Assistant Professor	: Dr. Jyotsnarani Pradhan Dr. Sanatan Majhi
Guest Faculty	: Mr. Sourav Ghosh Dr. Diptimayee Dash

Visiting/Collaborative Faculty

Besides the core faculty members of the Department, faculty from related disciplines of the University (Zoology, Botany, Chemistry, Computer Science & Statistics) and Scientists from National Institutes like DBT- Institute of Life Sciences, Bhubaneswar, CSIR- Institute of Minerals and Materials Technology, Bhubaneswar, National Institute of Science Education and Research, Bhubaneswar, are also associated with the academic program of the Department as invited/visiting faculty for teaching & extramural lectures.



PG Department of Biotechnology,
Utkal University

A brief profile of the Department

Post Graduate Department of Biotechnology was established in the year 2002.

- The first Department in the Eastern region (Odisha, Jharkhand and Chhattisgarh) to get financial support from Department of Biotechnology, Govt. of India under DBT-HRD Program
- The M.Sc. Course curriculum has been designed to impart theoretical and practical training to the students in Cell Biology and Genetics, Genetic Engineering, Biochemistry, Microbiology, Molecular Biology, Bioprocess Technology, Bioinformatics, Bioentrepreneurship etc.
- Department has also adopted choice based curriculum for M. Sc. students based on DBT model syllabus and UGC guidelines.

Programs Offered : M.Sc. – 33 (25 + 8)
: Ph.D. – 16

Collaboration of Department of Biotechnology



Research Thrust Areas



Facilities available

The Department has well equipped laboratories with number of equipment for students.

- Department has several research laboratories including Biochemistry & Molecular Biology, Microbial Technology, Redox Biology and Epigenetics, Animal Cell Culture facilities, Drosophila Room, Cold room, and other instrumentation facilities.
- Associates instruments includes PCR machine, Real Time PCR machine, Gel documentation system, Vertical and horizontal electrophoresis system, Inverted microscope, Microtome, Fluorescence microscope with digital imaging system, High Performance Liquid Chromatography, ELISA reader, UV-Vis Spectrophotometric etc., Spectrofluorometer, CO₂ Incubator, Phase II Bio-safety cabinet etc.).

Our Alumni Across The Globe We Are Proud of Them...

Over the years our alumni are placed in organizations / institution like IISc, Bangalore; National Institute of Bioinformatics, Bangalore; BHU, Varanasi; Sanjay Gandhi Post Graduate Institute of Medical Sciences (SGPGIMS), Lucknow; IITs, Assam University, Assam; JNU, New Delhi; IICT, Hyderabad; CCMB, CDFD, Hyderabad; ILS, Bhubaneswar; NII, New Delhi; NIPER, Mohali; IICB, Kolkata; AIIMS, New Delhi; NIT, Rourkela; Forest Research Institute, Dehradun Institutes/ Universities Abroad: Charles University, Prague, Czech Republic; Virginia Commonwealth University, USA; University of Wisconsin-Madison, USA; Microbial Chemistry, Department of Chemistry, Uppsala University, Sweden; University of Johannesburg, South Africa; Purdue University, West Lafayette, Indiana, USA; Clinical and Molecular Cancer Medicine, London, United Kingdom; University of California School of Medicine and U.C.S.D., U.S.A, University of Freiburg, Baden-Württemberg, Germany.

Research Publications in Major journals

The department has a signing and vibrant research culture.

- International Journal of Biological Macromolecules,
- Food and Chemical Toxicology,
- Journal of Biochemical and Molecular Toxicology, Chemico Biological Interaction,
- International Journal of Pharmaceutics,
- Biochemica Biophysica Acta,
- Biomedicines and Pharmacotherapy,
- European J. Biophysics,
- Biochemistry and Cell Biology,
- Materials Science and Engineering: C
- Nanomedicine,
- Biomaterial Science

Scholarly Activities, outreach programmes and extension of research support: The Department has organised National Seminar, Refresher courses, skill development programme (for College and University teachers) and popular lectures for the students



Ongoing activities at Department of Biotechnology



Departmental Achievements

**World Bank
Team Visit**



Workshop, Seminars & Conclave



Science Day Special Lecture



World Environment Day



Outreach Program



Cultural Activities



OUR ALUMNI ACROSS THE GLOBE

We are proud of them...



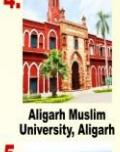
1. INST, Mohali



2. NIPER Mohali



3. CSIR - IMTECH, Chandigarh



4. Aligarh Muslim University, Aligarh



5. Banaras Hindu University



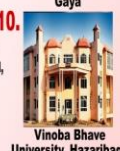
6. FRI, Dehradun



7. Shiv Nadar University, New Delhi



8. Lucknow University, Lucknow



9. SGPGIMS, Lucknow



10. Magadh University, Gaya



11. Vinoba Bhave University, Hazaribagh



12. Assam University, Silchar



13. Visva Bharati University, Shanti Niketan

14. IIT, Kharagpur

15. KIIT University, Bhubaneswar

16. Sambalpur University, Sambalpur

17. ICAR - CIFA, Bhubaneswar

18. ICAR - ICFMD, Bhubaneswar

19. Agharkar Research Institute, Pune

20. CSIR - NCL, Pune

21. ICT, Mumbai

22. CDFD, Hyderabad

23. ICMR - NICE, Kolkata

24. Indian Institute of Technology Madras

25. Vellore Institute of Technology Chennai

26. Pondicherry University, Pondicherry

27. IBAB, Bangalore

28. Bangalore City Science, Bangalore University, Bangalore

29. JNCASR, Bangalore

30. Bangalore University, Bangalore

31. Institute of Bioenergy & Bioprocess Technology, Shandong Sheng, China

32. The Hebrew University of Jerusalem, Jerusalem, Israel

33. Upmc Hillman Cancer Center, Pittsburg, USA

34. Johns Hopkins University, Baltimore, USA

35. University of Pittsburgh, Pennsylvania, USA

36. Biological Centrum Avcr, South Bohemia, Czech Republic

37. University of Freiburg, Baden-Württemberg, Germany

38. Goethe University, Frankfurt, Germany

39. Kansas State University, Manhattan, USA

40. Cleveland Clinic, Ohio, USA

41. University of Iowa Hospitals & Clinics, Iowa City, USA

42. University of California, Los Angeles, USA

43. University of Liverpool, England, UK

44. University of Wisconsin, Madison, USA

45. Harvard University, Cambridge Ma, USA

46. Toronto Metropolitan University, Toronto, Canada

47. National Institute of Health, Bethesda, USA

48. Uppsala University, Uppsala, Sweden

49. Karolinska Institute, Stockholm, Sweden

50. RWTH Aachen University, Aachen, Germany

51. Jamia Millia Islamia, New Delhi

52. JNU, New Delhi

53. ICGB, New Delhi

54. NII, New Delhi

55. Indian Institute of Technology Kanpur

56. IIIT, Lucknow

57. Leibniz Institutes - ISAS, Dortmund, Germany

58. Citryll B.V., Utrecht, Netherlands

59. NEHU, Shillong

60. IICB, Kolkata

61. Ravenshaw University, Cuttack

62. MSCBDU, Baripada

63. Institute of Life Sciences, Bhubaneswar

64. Utkal University, Bhubaneswar

65. CSIR - IMMT, Bhubaneswar

66. NISER, Jatani

67. CSIR - CSIR-ICT, University of Hyderabad, Hyderabad

68. CCMB, Hyderabad

69. NIAB, Hyderabad

70. Indian Institute of Technology Bombay

71. National Centre For Cell Science, Pune

72. IISER, Bhopal

73. Central University of Rajasthan, Rajasthan

74. Jammu and Kashmir

75. Punjab

76. Uttarakhand

77. Bihar

78. Jharkhand

79. West Bengal

80. Odisha

81. Chhattisgarh

82. Maharashtra

83. Telangana

84. Andhra Pradesh

85. Karnataka

86. Puducherry

87. University of Johannesburg, Johannesburg, South Africa

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124. University of Johannesburg, Johannesburg, South Africa



Our Alumni in Industries



The journey continues...

Biotech Consortium
India Limited,
New Delhi

2018-
2020

2017-
2019

Miss. Ananya Ghosh
Medgenome Lab Pvt. Ltd.,
Karnataka

Miss. Ranjita Paleya

Episource Pvt. Ltd.,
Tamil Nadu

2017-
2019

2017-
2019

Miss. Prity Kumari
Biocon Biologics Ltd.,
Karnataka

Miss. Swagatika Behera
Research Associate,
Lupin Biotech Pvt. Ltd.,
Maharashtra

2017-
2019

2016-
2018

Miss. Ankita Pal
Associate Centralized
Monitor, IQVIA, Odisha

Mrs. Ipshita Shibani
Gold Director, Oriflame
Cosmetics, Switzerland

2014-
2016

Mr. Suraj Sharma
Research Associate,
EnzeneBiosciences Ltd.,
Karnataka

2015-
2017

Miss. Ishita Basu
Business Analyst Deloitte
India (Offices of the US),
Karnataka

2014-
2016

Mr. Anurag Singhal
Quality Specialist in Last
Mile Quality, Amazon India

2014-
2016

Dr. Govinda R. Yedida
Senior Research Scientist
(R&D), Provis Biolabs,
Telangana

2009-
2011

Mr. Debayani Chokrobarty
Project Manager, TransPerfect,
Pune, Maharashtra

2012-
2014

Dr. Vijay Mandal
Clinical Project Lead,
ICON Pic, Trivandrum, Kerala

2004-
2006

Dr. Ananda Maheswari
Research Scientist, Clone
Development Team, Lupin
Ltd., Pune, Maharashtra

2008-
2010

Dr. Binay K. Thakur
Clinical Development Senior
Manager, Biocon Biologics,
Karnataka

2002-
2004

Dr. Kumar Abhishek
Regional Business Manager
Central India & Pune,
Montra Healthcare Pvt. Ltd.

2002-
2004

Department of Biotechnology

Our Alumni as Successful Entrepreneurs



Dr. Aseem Mishra

Co-Founder & CEO, Prantae
Solutions Private Limited,
Bhubaneswar, Odisha
National Startup Awards 2022



Dr. Sawan Kumar

General Manager, Quality
Assurance & Regulatory
Affairs Sea6 Energy Pvt. Ltd.,
Bangalore, Karnataka



Dr. Saurabh Pandey

Co-Founder, Databaum, Hamburg,
Basel, Switzerland



Mr. Saurabh Bhanushali

Managing Director, Mahalaxmi oil mill,
Food & fodder, Dhansura, Gujarat

Department of Biotechnology

Major Publications

Neurol Sci (2012) 33:869–873
DOI 10.1007/s10072-011-0853-4

ORIGINAL ARTICLE

Biomedicine & Pharmacotherapy 81 (2016) 31–37



Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com/en



Cytokine

Volume 157, September 2022, 155967

scientific reports

Reviews in Endocrine and Metabolic Disorders (2021) 22:421–451
<https://doi.org/10.1007/s11154-020-09606-0>

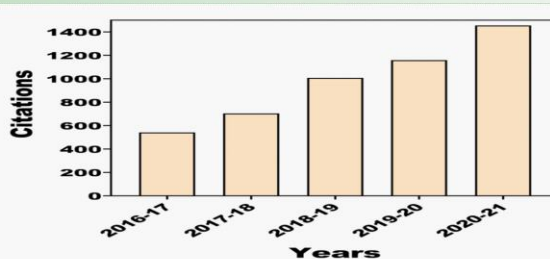
Biomaterials
Science

REVIEW

[View Article Online](#)

International Journal of Biological
Macromolecules
Volume 115, August 2018, Pages 853–860

Research Outcome (2016 - 2022)



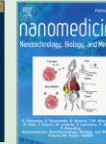
75 Total publications

3-9 Impact factor range

1446 Citations




72 h-index of faculty

137 i-10 index



Patents & Products

PRIMARY ANTIBODY
FOR DETECTION OF TRANSFERRIN
A PRODUCT OF UTKAL UNIVERSITY

Developed by
 Department of Biotechnology
 Utkal University, Bhubaneswar, INDIA
 Web: www.utkaluniversity.nic.in

Manufactured by
 Abgenex Pvt. Ltd.
 E-8, Industry, KIIT Post Office
 Bhubaneswar, INDIA
 Web: www.abgenex.com

Inventors:
Prof. Jagneshwar Dandapat, Mr. Abinash Dutta &
Prof. Nakulnanda Mohanty

[illegible]


Australian Government
IP Australia

**CERTIFICATE OF GRANT
INNOVATION PATENT**

Patent number: 2023240462

The Commissioner of Patents has granted the above patent on 30 March 2023, and certifies that the above conditions have been implemented to the Registrar of Patents.

Name and address of patentee:
Prof. Lisa Searles (on behalf of) Zoology Research Institute, Cuckoo 730033 India
Dr. Srinivas Prasad (on behalf of) Zoology Research Institute, Cuckoo 730033 India
Dr. Jayashankar Prasad (on behalf of) Zoology Research Institute, Vikram University Varanasi India
Prof. Prasad Jayashankar Prasad (on behalf of) Zoology, Vikram University Varanasi India

Title of invention:
PROCESS FOR DEVELOPING SEAWATER EXTRACT AND COMPOSITION USEFUL AGAINST COVID-19, COVID-19 DAMAGE, AND SINUS CURE

Name of inventor(s):
Srinivas, Prof. Lisa, Jayashankar, Dr. Jayashankar, Prasad, Dr. Jayashankar and Prasad, Prof. Lisa

Priority date: Eight month 22 July 2021

NOTE: This innovation is filed under a non-commercial patent and will be taken into consideration by the Commissioner of Patents and a Certificate of Innovation will have issued. See sections 120(1A) and 120A under Patents Act and 1995, and not on the revenue of the document.

A PROFILE OF THE DEPARTMENT OF BIOTECHNOLOGY UTKAL UNIVERSITY



**UTKAL UNIVERSITY,
VANI VIHAR, BHUBANESWAR, ODISHA-751004**

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DEPARTMENT AT A GLANCE

Post Graduate Department of Biotechnology was established in the year 2002 which is supported by the Department of Biotechnology, Govt. of India, New Delhi, under Human Resource Development Programme. The Department started with two renowned Academicians, Prof. G.B.N. Chainy, FNASc, Founder Professor of the Department and Prof. S.P. Adhikary, Former Vice Chancellor, F.M. University. The Department is equipped with the state of the art infrastructure for teaching and research in Biotechnology. The M.Sc. Course curriculum has been designed to impart theoretical and practical training to the students in Cell Biology and Genetics, Genetic Engineering, Biochemistry, Microbiology, Bio-techniques, Molecular Biology, Enzyme and Bioprocess Technology, Immunology, Environmental Biotechnology, Biostatistics and Bioinformatics. Our motive is to produce competent biotechnologists who can employ premium processes and applications which will profoundly influence existing paradigm of agriculture, industry, healthcare and restoration of environment providing sustainable competitive edge to present society.

Department has also adopted choice-based curriculum for M.Sc. students based on DBT model syllabus and UGC guidelines and has introduced an allied elective paper i.e. Biotechniques (3rd semester), which can be opted by P.G. Science students from other disciplines. Aim of the department is to nurture youth for scientific usage of natural resources in sustainable manner, to explore health problems of the State and to protect environment and biodiversity of the state and country with the help of tools and techniques of Biotechnology.

Alumni of this department are working in different prestigious organization of National and International repute. Our department also has various tie ups with renowned organisations such as NISER, CSIR-IMMT, ILS and various other Institutes.

Department of Biotechnology has organized various levels of seminars, workshop and Skill development programs to improve the skill and competence of undergraduate, Post graduate students and research scholars from different parts of the states. Department also promote student centric Start-ups and Entrepreneurship development programme.

2. VISION & MISSION

Vision

- ❖ P.G. Department of Biotechnology, Utkal University has a vision to become a centre of excellence in Biotechnology education, training and research in the Country and to develop a strong linkage between Academics, Research and Industry. The curriculum and the research strategies have been developed with integrative approaches in order to transform the idea and innovation of young talents into value added products.

Mission

- ❖ The Mission of the Department is to nurture, mentor and train young talents with the latest technologies in the field of biotechnology for providing global competence.

3. DEPARTMENT TEAM

FACULTY:

Sl.No	Name	Designation	Qualification
1.	Prof. Jagneshwar Dandapat	Professor & Head	M.Sc., M.Phil., Ph.D.
2.	√ Dr. Sabuj Sahoo	Associate Professor	M.Tech., Ph.D. (2015-2020)
3.	Dr. Jyotsnarani Pradhan	Assistant Professor	M.Sc., Ph.D.
4.	Dr. Sanatan Majhi	Assistant Professor	B. V. Sc & A.H., M.V. Sc., Ph.D.
5.	Mr. Sourav Ghosh	Guest Faculty	M.Sc., Ph.D. (Cont.)
6.	Dr. Diptimayee Dash	Guest Faculty	M.Sc., Ph.D.

NON -TEACHING STAFF:

Sl.No.	Name	DESIGNATION
1.	Mr. Pradeep Kumar Sahoo	Senior Typist
2.	Mr. Pradyumna K Sahoo	Computer cum Office assistant (Consolidated)
3.	Mr. Bholanath Jena	Peon
4.	Madhumati Majhi	Lab Assistant

4. PROGRAMMES OFFERED

- M.Sc. : 33
- Ph.D. : 16
- M.Phil. (2017-2021): 04

M.Sc. Syllabus (Biotechnology)

THE SALIENT FEATURES OF THE COURSE CURRICULUM

This syllabus provides for implementation of Choice based Credit courses under Semester Pattern. In this pattern, there shall be four Semesters having 20 papers, each having 6 credits, thus 120 credits and in total 2000 marks. A student is supposed to earn 6 credits for a theory paper of 100 marks by attending 40 hours of lecture and 30 to 40 hours outside class and self-study and for a Dissertation of 100 marks of 4 credits, he/she has to devote 20 hours for contacting the teacher and 100 hours outside for preparation.

The Distribution of Courses and Credits:

1ST SEMESTER:

(500 Marks, 30 Credits)

Paper-101 Biochemistry

(40 Lectures / 6 Credits)

Paper-102 Cell Biology and Genetics

(40 Lectures / 6 Credits)

Paper-103 Instrumentation & Analytical techniques

(40 Lectures / 6 Credits)

Paper-104 Biostatistics and Computational Biology

(40 Lectures / 6 Credits)

Paper-105 PRACTICAL-I

(60 Practical Classes / 5 Credits)

Seminar/Journal club/Assignment

(1 Credit)

2ND SEMESTER:

(500 Marks, 30 Credits)

Paper-201 Microbiology

(40 Lectures / 6 Credits)

Paper-202 Immunobiology and Immunotechnology

(40 Lectures / 6 Credits)

Paper-203 Molecular Biology

(40 Lectures / 6 Credits)

Paper-204 Animal Biotechnology

(40 Lectures / 6 Credits)

Paper-205 PRACTICAL-II

(60 Practical Classes / 5 Credits)

Seminar/Journal club/Summer training report

(1 Credit)

3RD SEMESTER:

(500 Marks, 30 Credits)

Paper-301 Genetic Engineering

(40 Lectures / 6 Credits)

Paper-302 Bioprocess Engineering and Industrial Biotechnology (40 Lectures / 6Credits)

Paper-303 Core Elective courses

CE-1: Plant Biotechnology/CE-2: Microbial Technology/ CE-3: Proteomics (40 Lectures / 6 Credits)

Paper-304 Allied Elective courses (40 Lectures / 6 Credits)
 AE-1 Animal Physiology and Developmental Biology (for M.Sc. Biotechnology)
 AE-2 Biotechniques ` (for Allied subjects)
 Paper-305 PRACTICAL-III (60 Practical Classes / 5 Credits)
 Seminar/Journal club (1 Credit)

4TH SEMESTER: (500 Marks, 30 Credits)

Paper-401 Evolution and Environmental Biotechnology (40 Lectures / 6 Credits)

Paper-402: Free Elective (FE):

Fundamentals of Life Science: Origin of Life, Living Systems and Living Processes

Paper-403 Research aptitude, Scientific communication and Bio-entrepreneurship (4 Credit)

Project Work: 404 (300 Marks, 20 Credits)

- Dissertation [200]
- Seminar presentation and Viva Voce [50+50]

Total Marks: 2000

Total Credits: 120

FIRST SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
1.	Paper-101	Biochemistry	100 = (70 End Sem)+30(Mid Sem)	6	
2.	Paper-102	Cell Biology and Genetics	100 = (70 End Sem)+30(Mid Sem)	6	
3.	Paper-103	Instrumentation & Analytical techniques	100 = (70 End Sem)+30(Mid Sem)	6	
4.	Paper-104	Biostatistics and Computational Biology	100 = (70 End Sem)+30(Mid Sem)	6	
5.	Paper-105	PRACTICAL-I Seminar/Journal club/Assignment	100 = (70 End Sem)+30 (MidSem)	6	

SECOND SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
1.	Paper-201	Microbioogy	100 = (70 End Sem)+30 (Mid Sem)	6	
2.	Paper-202	Immunobiology and	100 = (70 End	6	

		Immunotechnology	Sem)+30 (Mid Sem)		
3.	Paper-203	Molecular Biology	100 = (70 End Sem)+30 (Mid Sem)	6	
4.	Paper-204	Animal Biotechnology	100 = (70 End Sem)+30 (Mid Sem)	6	
5.	Paper-205	PRACTICAL-II Seminar/Journal club/Assignment	100 = (70 End Sem)+30(Mid Sem)	5 1	

THIRD SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
1.	Paper-301	Genetic Engineering	100=70(End- Sem)+30 (Mid- Sem)	6	
2.	Paper-302	Bioprocess Engineering and Industrial Biotechnology	100=70(End- Sem)+30 (Mid- Sem)	6	
3.	Paper-303	Core Elective courses CE-1: Plant Biotechnology/ CE-2: Microbial Technology/ CE-3: Proteomics	100=70(End- Sem)+30 (Mid- Sem)	6	
4.	Paper-304	Allied Elective courses AE-1 Animal Physiology and Developmental Biology AE-2 Biotechniques	100=70(End- Sem)+30 (Mid- Sem)	6	
5.	Paper-305	PRACTICAL-III Seminar/Journal club	100=70(End- Sem)+30 (Mid- Sem)	5 1	

FOURTH SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
1.	Paper-401	Evolution and Environmental Biotechnology	100=70(End- Sem)+30 (Mid- Sem)	6	
2.	Paper-402	Free Elective (FE): Fundamentals of Life Science: Origin of Life, Living Systems	100=70(End- Sem)+30 (Mid- Sem)	4	

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
		and Living Processes			
3.	Paper-403	Research aptitude, Scientific communication and Bio-entrepreneurship			
Project Work: 404			(300 Marks, 20 Credits)		
1.	Dissertation		200		
2.	Seminar presentation and Viva Voce		50+50		
Total	20		2000	120	

FREE ELECTIVE PAPERS

Fundamentals of life science: Origin of life, Living systems and living processes.

Ph.D. coursework Syllabus

(Biotechnology)

PAPER- I

100 Marks

UNIT –I (RESEARCH METHODOLOGY)

1. Research objective and statement of problem, types of research.
2. Research proposal designing and formulation.
3. Research Methodology.
4. Review of literature, concept development, theory, hypothesis and manuscript preparation.

UNITS-II (INSTRUMENTATIONS)

1. Principles and applications of spectrophotometer.
2. Principles and applications of Chromatography. Types of Chromatography.
3. Principles and applications of Electrophoresis.
4. Principles and applications of PCR.

UNIT – III (TECHNIQUES IN BIOTECHNOLOGY)

1. Isolation and purification of DNA.
2. Isolation and purification of RNA.
3. Isolation and Purification of Proteins.
4. Commonly used vectors for gene-cloning, DNA manipulating enzymes, construction of genomic and cDNA libraries.

UNIT – IV (MICROBIOLOGY)

1. Methods in Microbiology: Sterilization, Culture Media, Pure culture technique, enrichment culture technique, Microbial staining methods, Maintenance and preservation of Microorganisms.
2. Microbial growth: Growth curve, measurement of growth, growth yields, synchronous growth, continuous culture, growth as affected by environmental factors.
3. Antibiotics: Penicillin and Cephalosporin, broad-spectrum antibiotics, antibiotics from prokaryotes, antifungal antibiotics, mode of action of different antibiotics, resistance to antibiotics, Multiple Drug Resistance.
4. Microbes for industrial use. Fermentation and fermented products, Bio-fertilizers, Microbes in mineral beneficiation and bioremediation.

UNIT-V (IMMUNO-TECHNOLOGY)

1. Antigen antibody interaction and their applications in immunodiagnostics.
2. Detection of antigen /protein by western blotting.
3. Antigen based biosensor, ELISA and CHIP.
4. FACS and its applications.

Paper-II

Marks: 100

BIOSTATISTICS AND COMPUTATIONAL BIOLOGY

UNIT - I

1. Statistics: Definition, functions and limitations.
2. Treatment of data: frequency distribution, Graph of Frequency Distribution
3. Descriptive Measures: Averages and Dispersions (Grouped and ungrouped).
4. Probability: Concepts, definition and elementary problems based on definition.

UNIT - II

1. Inference: Definition-parameter, Statistic sampling distributors, standard error,
2. Test of Hypothesis, type I and Type II errors.
3. Large sample tests: Z tests, small sample tests: t and F tests.
4. Chi-square test: Goodness of fit and Test of independence.

UNIT - III

1. Curve Fitting: First, Second degree and exponential curve.
2. Simple correlation and Regression.
3. Concept of multiple correlation and Regression.
4. Analysis of variance: one way and two way classification.

UNIT – IV

1. Fundamentals of Computer: CPU, memory, I/O unit, storage, multimedia. Introduction to Operating Systems: DOS, Windows and Linux Operating Systems. Ideas about Computer Viruses. Use of online resources and the internet communication technology.
2. Idea on working with MS-Word, Excel and Power point.
3. Programming with C++ and PERL: Introduction, Control Flow: Statement and Block, if, ifelse, Nested if-else statements, For, while, do-while loops, break, switch continue, Statements, go to statement. Functions and Arrays.
4. Computation of simple mathematical and statistical formulae using the Programming C++ and PERL.

UNIT - V

1. Introduction to Bioinformatics
2. Elementary idea about Database management system, e.g. Gene bank, EMBL, Swiss-Prot, Sequence database like FASTA, BLAST algorithm and Bioinformatics tools.
3. Pairwise sequence alignment, multiple sequence alignment, Gene prediction and Protein structure prediction.

Paper-III Marks: 100

1. Review of Literature : 50 marks

2. Presentation before SRC : 50 marks

Paper-IV Marks: 100

1. Seminar-I: 50 marks

2. Seminar-II: 50 marks

SINo	Paper	Subject	Marks
1	I	Research Methodology/ Tools and Techniques in Biotechnology	100
2	II	Biostatistics and Computational Biology	100
3	III	1. Review of Literature: 50 marks 2. Presentation before SRC: 50 marks	100
4	IV	1. Seminar-I: 50 marks 2. Seminar-II: 50 marks	100
Total			400

Total marks: 400

5. FACULTY PROFILE



Prof. Jagneshwar Dandapat

Present Position and Designation:

- Professor and Head, Dept of Biotechnology, Utkal University
- Coordinator, Dept. of Biotechnology, Govt. of India supported Teaching programme under Human Resource Development (HRD) support
- Director, Research & Development, Utkal University
- Coordinator, Centre of Excellence in Integrated OMICS and Computational Biology supported by World Bank and Dept. of Higher Education, Govt. of Odisha under WB-OHEPEE programme

Phone No.: 09437466087

E-mail ID: jdandapat.nou@gmail.com, jd.biotech@utkaluniversity.ac.in

Areas of Research Interest:

- Redox homeostasis
- Epigenetics
- Immune-response

Courses Taught:

Immunology, Cell & Molecular Biology, Biomolecules, Biotechniques and Animal cell culture

Educational qualification

Degree	Subject	Institution/Board	Year
PhD	Zoology	Utkal University, Bhubaneswar, Orissa, INDIA	2002
M.Phil.	Zoology	Utkal University, Bhubaneswar, Orissa, INDIA	1994
M. Sc.	Biotechnology	Utkal University, Bhubaneswar, Orissa, INDIA	1992
B. Sc.	Zoology, Botany, Chemistry	Utkal University, Bhubaneswar, Orissa, INDIA	1989

Research guidance

a. Research Supervisor and Mentorship: Mentoring of Ph.D Students:

10 (awarded)

I. Dr. Javed Akthar:

Title: -Peptides and Mimetics as inhibitors of NF-kB pathway.

II. Dr. Alpana Sahoo:

Title:-Antioxidant defence status in Tasar Silkworm, *Antheraea mylitta*.

III. Dr. Madhumita Behera:

Title:-Studies on Soil bacteria and their Bioactive substances from Similipal Biosphere reserve.

IV. Dr. Smaranika Sahu :

Title:-Cellular redox status during development of *Antheraea mylitta* under different physiological conditions.

V. Dr. Sunil Kumar Sahoo:

Title:-Age related changes in the expression of antioxidant enzymes and apoptotic proteins in testis of neonatal hypothyroid rats.

VI. Dr. Suresh Kumar Bunker:

Title:-Effect of 6-n-Propyl-2-thiouracil, a thyroid disrupting drug, on Male rat liver: A study on catalase and DNA binding proteins.

VII. Dr. Abinash Dutta:

Title:-Redox regulatory mechanism in tasar Silkworm, *Antheraea mylitta*: Modulatory effect of exogenous antioxidants.

VIII. Dr. Asit Ray:

Title:-Chemotyping, genotyping and neural network based modeling for drug yield optimization in *Hedychium coronarium*

IX. Dr. Sandeep Saini:

Title:-Validation of antihypertensive homeopathic drug *Rauwolfia serpentina* by biochemical and molecular approaches in rat model.

X. Dr. Manas Kumar Jagdev:

Title:-Structural Characterization of Mycobacterial and Plant Clp Chaperone Machinery Proteins

XI. Dr. Atala Bihari Jena

Title:-Conformational dynamics of biomolecules exposed to polycyclic aromatic hydrocarbon

XII. Dr. Umesh Chandra Dash

Title:-Pharmacological Profiling of *Geophila repens* and *Piper trioicum* and Evaluation of Their Therapeutic Potential Against Alzheimer's diseases

- No of ongoing Ph.D Scholars -05
- Mentoring of Post Doctoral Students: 06
- Mentoring of M.Phil. Students: 08
- M. Sc. Students: 30 + 09 (ongoing)

Research Collaboration and Projects undertaken:

- Collaboration with Institute of Life Sciences, Bhubaneswar; NISER-Bhubaneswar; CSIR-Institute of Minerals & Materials Technology, Bhubaneswar; Regional Plant Resource Centre, Bhubaneswar; Bloomberg School of Public Health, Johns Hopkins University, USA; Department of Biochemistry, Molecular Biology, Entomology and Plant Pathology, Mississippi State University, USA.
- Handling of extramural research grants- DAE, Govt. of India, DST, Govt. of India, DST, Govt. of Odisha and DST-PURSE scheme, AYUSH, Govt. of India

Research Publications

Journal Article

1. Gold (III) assisted CN bond dissociation; Synthesis, structure, photoluminescence, and pharmacokinetic studies of 1, 10/-phenanthroline-gold (III)-N-heterocyclic carbene. Sahu P, Jena AB, Barik S, Kisan HK, Isab AA, Dandapat J, Dinda J. *Journal of Molecular Structure*. 2023 Aug 5;1285:135442.
2. Bioactive potential of morin loaded mesoporous silica nanoparticles: A novel and efficient antioxidant, antidiabetic and biocompatible abilities in in-silico, in-vitro, and in-vivo models. Kerry RG, Singh KR, Mahari S, Jena AB, Panigrahi B, Pradhan KC, Pal S, Kisan B, Dandapat J, Singh J, Pandey SS. *OpenNano*. 2023 Mar 1;10:100126.
3. Thermodynamics of benzoquinone-induced conformational changes in nucleic acids and human serum albumin. Jena AB, Samal RR, Dandapat J, Subudhi U. *Chemico-Biological Interactions*. 2023 Jan 5;369:110281.
4. Epigenetic signature in neural plasticity: the journey so far and journey ahead. Nayak M, Das D, Pradhan J, Ahmed RG, Laureano-Melo R, Dandapat J. *Heliyon*. 2022 Dec 19:e12292.
5. A Computational Insight on the Inhibitory Potential of 8-Hydroxydihydrosanguinarine (8-HDS), a Pyridone Containing Analog of Sanguinarine, against SARS CoV2. Jena AB, Kanungo N, Chainy GB, Devaraji V, Das SK, Dandapat J. *Chemistry & Biodiversity*. 2022 Nov;19(11):e202200266.
6. Molecular interaction of benzo-a-pyrene inhibits the catalytic activity of catalase: Insights from biophysical and computational studies. Jena AB, Rath S, Subudhi U, Dandapat J. *Journal of Molecular Structure*. 2022 Oct;1265:133494.
7. Epigenomic interplay in tumor heterogeneity: Potential of epidrugs as adjunct therapy. Rath S, Chakraborty D, Pradhan J, Khan I, Dandapat J. *Cytokine*. 2022 Jul 26;157:155967-.
8. CTK7A, a curcumin derivative, can be a potential candidate for targeting HIF-1 α /p300 complex: Evidences from in vitro and computational studies. S Rath, AB Jena, A Bhattacharyya, J Dandapat - *Biophysical Chemistry*, 2022
9. Therapeutic potential and ethnopharmacology of dominant mangroves of Bhitarkanika National Park, Odisha, India. SK Das, B Das, AB Jena, C Pradhan, GSahoo, JDandapat. *Chemistry&Biodiversity*, 2022 Feb 1.
10. Comprehending the role of homeopathic preparations of *Rauwolfia serpentina* on oxidative stress parameters of cardiac tissue of DOCA-salt induced hypertensive male rats: An experimental approach Sandeep Kumar, Gagan Bihari Nityananda Chainy, Jagdishwar Dandapat, Akshaya Kumar Hati, Laxmikanta Nanda. *Phytomedicine Plus*, 1(4), 100115. doi:10.1016/j.phyplu.2021.100115.
11. Interface-based design of the favipiravir-binding site in SARS-CoV-2 RNA-dependent RNA polymerase reveals mutations conferring resistance to chain

- termination Aditya K Padhi, JagneshwarDandapat, Prakash Saudagar, Vladimir N Uversky, Timir Tripathi. FEBS Letters. doi:10.1002/1873-3468.14182.
12. Umesh Chandra Dash, Sandeep Kumar Swain, Satish Kanhar, Purusottam Banjare, Partha Pratim Roy, Jagneshwar Dandapat, Atish Kumar Sahoo. Journal of Ethnopharmacology.doi: 10.1016/j.jep.2021.114637
 13. The modulatory role of prime identified compounds in *Geophila repens* inmitigating scopolamine-induced neurotoxicity in experimental rats ofAlzheimer's disease via attenuation of cholinesterase, β -secretase, MAPtlevels and inhibition of oxidative stress imparts inflammation.
 14. Factors regulating dynamics of angiotensin-converting enzyme-2 (ACE2),the gateway of SARS-CoV-2: Epigenetic modifications and therapeuticinterventions by epidrugs. Suvasmita Rath, Venkateswarlu Perikala, Atala Bihari Jena, Jagneshwar Dandapat. Biomedicine & Pharmacotherapy, 143, 112095. doi:10.1016/j.biopha.2021.112095
 15. TLR2 dimer-specific ligands selectively activate Protein Kinase C isoforms in Leishmania infection. Arkajyoti Mukherjee, Sayoni Roy, Ashok Patidar, Neelam Bodhale, Jagneshwar Dandapat, Bhaskar Saha, Arup Sarkar. Immunology, 2021.
 16. A primer on cytokines. Prashant Chauhan, A Nair, A Patidar, Jagneshwar Dandapat, A Sarkar, B Saha. Cytokine, (2021), 155458, doi: 10.1016/j.cyto.2021.155458
 17. March of Mycobacterium: miRNAs intercept host cell CD40 signalling. Prashant Chauhan, Jagneshwar Dandapat, Arup Sarkar &Bhaskar Saha. Clinical &Translational Immunology. (2020); doi: 10.1002/cti2.1179
 18. Catechin and curcumin interact with S protein of SARS-CoV2 and ACE2 of human cell membrane: insights from computational studies Atala B. Jena, Namrata Kanungo, Vinayak Nayak, G.B.N. Chainy and JagneshwarDandapat. Scientific Reports, Nature. (2021),11(1),2043. <https://doi.org/10.1038/s41598-021-81462-7>
 19. The benzene metabolite p-benzoquinone inhibits the catalytic activity of bovine liver catalase: A biophysical study. Atala B. Jena, Rashmi R. Samal, KanchanKumari, Jyotsnarani Pradhan, Gagan B. N. Chainy, UmakantaSubudhi, Satyanarayan Pal, JagnehswarDandapat. International journal of biological macromolecules.(2021)vol. 167: 871-880. doi:10.1016/j.ijbiomac.2020.11.044.
 20. Recombinant expression, purification and SAXS analysis of Arabidopsis thaliana ClpC1.Manas K. Jagdev, Jagneshwar Dandapat, Dileep Vasudevan. International JournalofBiologicalMacromolecules.(2021)167,1273–1280.
 21. Oxidative stress correlates well with markers of metabolic syndrome in clinically hypothyroid cases: a hospital based study in a remote tribal district. S Panda, MK Dash, PK Thatoi, Jagneshwar Dandapat. B Rath. RUDN Journal of Medicine,(2021) 25 (1), 55-65.
 22. Leaf Extract of *Nerium oleander* L. Inhibits Cell Proliferation, Migration and Arrest of Cell Cycle at G2/M Phase in HeLa Cervical Cancer Cell. ShubhasmitaMohapatra, Anil K. Biswal, JagnehswarDandapat&Priya R. Debata.Anti-Cancer Agents in Medicinal Chemistry(2020); doi: 10.2174/18715206206662008111214005.
 23. Isolation, identification, and quantification of Pentylcurcumene from *Geophila repens*: A new class of cholinesterase inhibitor for Alzheimer's disease. Umesh Chandra Dash, Satish Kanhar, Anshuman Dixit, Jagnehswar Dandapat, Atish Kumar Sahoo. Bioorganic chemistry,(2019) 88, 102947. <https://doi.org/10.1016/j.bioorg..102947>.
 24. First report on transferrin in the silkworm, *Antheraea mylitta*, with a putative role in antioxidant defense: Insights from proteomic analysis and immunodetection. Abinash Dutta, Jagneshwar Dandapat, Nakulananda Mohanty. Comparative

- Biochemistry and Physiology. (2019); Part B 233: pp. 23-34. doi.org/10.1016/j.cbpb.2019.03.010.
25. Curcumin restores hepatic epigenetic changes in propylthiouracil(PTU)Induced hypothyroid male rats: A study on DNMTs, MBDs, GADD45a, C/EBP- β and PCNA. Suresh Kumar Bunker, Abinash Dutta, Jyotsnarani Pradhan, Jagneshwar Dandapat & G.B.N. Chainy. Food and Chemical Toxicology(2019); 123. 2019, doi.org/10.1016/j.fct.10.050.
 26. Pro-inflammatory cytokine Interleukin-1 β (IL-1 β) controls Leishmania infection. Tejaswini Patil, Vasundhara More, Deepti Rane, Arkajyoti Mukherjee, Rahul Suresh, Ashok Patidar, Neelam Bodhale, David Mosser, Jagneshwar Dandapat, Arup Sarkar. Cytokine.(2018);doi.org/10.1016/j.cyto.2018.06.033.
 27. Neutrophils: Interplay between host defense, cellular metabolism and intracellular infection. Deepti Rane, Tejaswini Patil, Vasundhara More, Sushree Sangita Patra, Neelam Bodhale, Jagneshwar Dandapat & Arup Sarkar. Cytokine (2018); doi.org/10.1016/j.cyto.2018.07.009.
 28. Foliar supplementation of ascorbic acid and glycine boost the growth performance and antioxidant protection in the larvae of tropical tasar silkworm, *Antheraea mylitta*. Abinash Dutta, Jagneshwar Dandapat & Nakulananda Mohanty. Journal of Entomology and Zoology Studies(2018); E-ISSN: 2320-7078 P-ISSN: 2349-6800, 136-142.
 29. Type-1 interferons prolong the lifespan of neutrophils by interfering withmembers of the apoptotic cascade. Eresso Agaa, Arkajyoti Mukherjee, Deepti Rane, Vasundhara More, Tejaswini Patil, Ger van Zandbergend, Werner Solbach, Jagneshwar Dandapat, Heidi Tackenberg, Mareike Ohms, Arup Sarkarb, Tamas Laskay. Cytokine.(2018); doi.org/10.1016/j.cyto.2018.06.027.
 30. Low H₂O₂ and enhanced oxidative resistance in the diapause-destined pupa of silkworm, *Antheraea mylitta* (Lepidoptera: Saturniidae) suggest their possible involvement in dormancy and lifespan extension. Sahoo, A., Dutta, A., Dandapat, J., & Samanta, L. BMC Zoology(2018);DOI 10.1186/s40850-018-0027-4.
 31. Host plant-derived allelochemicals and metal components are associated with oxidative predominance and antioxidant plasticity in the larval tissues of silkworm, *Antheraea mylitta*: Further evidence of joint effects hypothesis. Smaranika Sahu, Abinash Dutta, Dinesh Kumar Ray, Jyotsnarani Pradhan, Jagneshwar Dandapat. Comparative Biochemistry and Physiology(2018); DOI 10.1016/j.cbpb.2018.06.004.
 32. Features and outcomes of drugs for combination therapy as multi-targets strategy tocombat Alzheimer's disease.Sahoo, A.K., Dandapat, J., Dash, U.C. & Kanhar, S. Journal ofEthnopharmacology(2017); 215: pp.42-73.
 33. Neonatal Exposure to 6-n-Propyl-Thiouracil, an Anti-Thyroid Drug, Alters Expression of Hepatic DNA Methyltransferases, Methyl CpG-Binding Proteins, Gadd45a, p53, and PCNA in Adult Male Rats.Bunker, S.K., Dandapat, J., Chainy, G.B., Sahoo, S.K. & Nayak, P.K. EuropeanThyroid Journal. (2017); 6: pp.281-291.
 34. Differential expression of apoptotic proteins in seminiferous tubule cells of adult ratsby neonatal exposure to 6-n-propyl-2-thiouracil (PTU), a thyroid disrupting chemical.Sahoo, S.K., Dandapat, J., and Chainy, G.B.N. Indian Journal of ExperimentalBiology(2017); 55: pp.634-641.
 35. Curcumin and Ellagic acid synergistically induce ROS generation, DNA damage, p53 accumulation and apoptosis in HeLa cervical carcinoma cells.Kumar, D., Basu, S., Parija, L.,

- Rout, D., Manna, S., Dandapat, J., and Debata, P.R. *Biomedicine & Pharmacotherapy*. (2016); 81: pp.31-37.
36. An Overview of Seasonal Changes in Oxidative Stress and Antioxidant Defence Parameters in Some Invertebrate and Vertebrate Species. Chainy, G.B.N., Paital, B. and Dandapat, J. (2016). *Scientifica*.
 37. Homeopathic Medicine *Rauwolfiaserpentina* Ameliorate Blood Pressure and Oxidative Stress Parameters of Kidney by Modulating Expression of Antioxidant Enzymes in Deoxycorticosterone Acetate (DOCA)-Salt-Induced Hypertensive Rat Model. Kumar, S., Dandapat, J., Chainy, G.B.N., Hati, A.K. and Nanda, L. *J Drug Res Dev*. (2016); 2(1): pp.2470-1009.
 38. Neonatal persistent exposure to 6 propyl- 2 Thiouracil, A Thyroid disrupting chemical, differentially modulates expression of hepatic catalase and C/EBP- β in adult rats. SK Bunker, J Dandapat, SK Sahoo, A Ray, GBN Chainy. *Journal of Biochemical & Molecular Toxicology*. (2015); DOI: 10.1002/jbt.21766.
 39. Hypothyroidism impairs antioxidant defence system and histoarchitecture of cerebral cortex of rat brain during postnatal development. Srikanta Jena, Shravani Bhanja, Jagneshwar Dandapat, Gagan B.N. Chainy. *Int. J. Devl Neuroscience* 47. (2015); doi.org/10.1016/j.ijdevneu.2015.04.202.
 40. Pro-oxidative challenges and antioxidant protection during larval development of non-mulberry silkworm, *Antheraea mylitta* (Lepidoptera: Saturniidae). A Sahoo, S Sahu, J Dandapat and L Samanta, *Italian J of Zoology*. (2015); doi:10.1080/11250003.2015.1103319
 41. Age related decrease in rat liver catalase expression is associated with change in its promoter methylation pattern. S.K. Bunker, J. Dandapat, G.B.N. Chainy. *Current trends in Biotechnology and Pharmacy* (2015); 9(1): 88-96.
 42. Foliar supplementation of zinc modulates growth and antioxidant defense system of tasar silkworm *Antheraea mylitta* 7S. Sahu, J. Dandapat, N. Mohanty, *Journal of Entomology and Zoology Studies*. (2015); 3(2):25-35.
 43. Oxidative Damaged products, Level of Hydrogen Peroxide and antioxidant protection in Diapausing Pupa of Tasar Silk Worm, *Antheraea mylitta*: A Comparative Study in Two Voltine Groups. A. Sahoo, J. Dandapat, L. Samanta. *International journal of Insect Science*. (2015); 7:11-17.
 44. Neonatal hypothyroidism alters expression of antioxidant enzymes and redox status in adult rat seminiferous tubule cells. S.K. Sahoo, G.B.N. Chainy, J. Dandapat. *Current trends in Biotechnology and Pharmacy*. (2015); 9(2): 117-131.
 45. Effect of aminotriazole on antioxidant defense system of tasar silkworm *Antheraea mylitta*. B Patra, S Sahu, J Dandapat. *Entomological Science*. (2014); 17: 316-323, doi:10.1111/ens.12060 .
 46. Effect of heavy metals on growth response and antioxidant defense protection in *Bacillus cereus*. M Behera, J Dandapat, CC Rath. *J of Basic Microbiol*. (2014); 54: 1201-1209.
 47. PEGylation of an osteoclast inhibitory peptide: Suitable candidate for the treatment of osteoporosis. J Akhtar, V Mallareddy, J Dandapat, P Maiti, SK Sahoo, and S Singh. *International Journal of Pharmaceutics*. (2012); 434: 429-436.
 48. Hypothyroidism modulates renal antioxidant gene expression during postnatal development and maturation in rat. S Jena, GBN Chainy and J Dandapat. *General and Comparative Endocrinology*. (2012); 178: 8-18.
 49. Curcumin differentially regulates the expression of superoxide dismutase in cerebral cortex and cerebellum of L-thyroxine (T4)-induced hyperthyroid rat brain.

- S Jena, J Dandapat, and GBN Chainy. *Neurological Sciences* (2012); (DOI 10.1007/s10072-012-1084-z).
50. Expression of antioxidant genes in renal cortex of PTU-induced hypothyroid rats: effect of vitamin E and curcumin. S Jena, GBN Chainy, and J Dandapat. *Molecular Biology Reports*. (2012); 39 (2):1193-1203.
 51. Induction of oxidative stress and inhibition of superoxide dismutase expression in rat cerebral cortex and cerebellum by PTU-induced hypothyroidism and its reversal by curcumin. S Jena, C Anand, GBN Chainy and J Dandapat. *Neurological Sciences*. (2012); 33(4): 869-873.
 52. Isolation and characterization and screening of bacteria isolate from Similipal Biosphere Reserve forest soil for their metal tolerance capacity and extracellular enzymatic activity. Madhumita Behera, Jagdishwar Dandapat, Chandi C. Rath. *Bioremediation, Biodiversity and Bioavailability*. (2009); 3 (2): 72-78.
 53. Probiotic induced immunomodulation: Investigation into the cellular and molecular mechanism involved. Panigrahi, A., Azad, I. S., Das, B. K., Dandapat, J., Das, G., Behera, S. and Mishra, S. S. *Research Journal of Biotechnology*. (2009); 4(3):7-13.
 54. Lipid Peroxidation and nonenzymatic antioxidants, Glutathione and ascorbic acid, in a carp, *Labeo rohita*. A. Sahoo, M. Patra and J. Dandapat. *Asian Journal of Microbiology, Biotechnology and Environmental Science*. (2008); 10 (127-130).
 55. Non-enzymatic antioxidant status and modulation of lipid peroxidation in the muscles of *Labeo rohita* by sub lethal exposure of CuSO₄. S. D. Jena & M. Behera & J. Dandapat & N. Mohanty. *Vet Res Commun* (2009); 33:421–429, DOI 10.1007/s11259-008-9188-x.
 56. Lipid peroxidation and antioxidant defence status during larval development and metamorphosis of giant prawn, *Macrobrachium rosenbergii*. Jagdishwar Dandapat, Gagan B.N. Chainy, K. Janardhana Rao. *Comparative Biochemistry and Physiology Part C*. (2003); 135: 221–233.
 57. Improved post larval production in Giant Prawn *Macrobrachium rosenbergii* through modulation of antioxidant defense system by Dietary Vitamin-E. Jagdishwar Dandapat, GBN Chainy and K Janardhana Rao. *Indian Journal Of Biotechnology*. (2003); 2:195-202.
 58. Comparative evaluation of biochemical parameters in wild and cultured brood stock of *Macrobrachium rosenbergii*. Bindu R. Pillai, A.P. Tripathy and J. DANDAPAT. *Indian J. Fish.* (2001); 48(1): 35-39.
 59. Dietary vitamin-E modulates antioxidant defence system in giant freshwater prawn, *Macrobrachium rosenbergii*. Jagdishwar Dandapat, Gagan B.N. Chainy, K. Janardhana Rao. *Comparative Biochemistry and Physiology Part C*. (2000); 127: 101–115.
 60. Antioxidant defence system in giant prawn *Macrobrachium rosenbergii*. Jagdishwar Dandapat, Gagan B.N. Chainy. (2001), <http://hdl.handle.net/10603/227825>
 61. An in vitro study of metal ion-induced lipid peroxidation in giant fresh water prawn *Macrobrachium rosenbergii* (de MAN). Jagdishwar Dandapat, K. Janardhana Rao & Gagan B.N. Chainy. *BioMetals*. (1999); 12: 89–97.

Conference Publications (presented/ published in proceedings):

1. Abinash Dutta, J Dandapat, (2018) Oxidative stress in tasar silkworm *Antheraea mylitta*: Beneficial role of antioxidant for improvement of larval health and silk production. National Seminar on Recent trends in Microbiology and Biotechnology, organized by the Society of Biotechnology and Bioinformatics and MITS school of Biotechnology, Bhubaneswar, Odisha from 16th-17th March, 2018.

2. Sandeep Kumar, A.K Hati, G.B.N Chainy, L.K Nanda, J Dandapat. Effect of Homeopathic medicine *Rauwolfia serpentina* on expression of superoxide dismutase in heart of Deoxycorticosterone acetate (DOCA)- salt induced hypertensive rat. National Seminar on Recent trends in Microbiology and Biotechnology, organized by the Society of Biotechnology and Bioinformatics and MITS school of Biotechnology, Bhubaneswar, Odisha from 16th-17th March, 2018.
3. Smaranika Sahu, J. Dandapat, N.M Mohanty. Effect of Manganese on growth and antioxidant defence of *Antheraea mylitta* National Seminar on Recent trends in Microbiology and Biotechnology, organized by the Society of Biotechnology and Bioinformatics and MITS school of Biotechnology, Bhubaneswar, Odisha from 16th-17th March, 2018.
4. Anita Roy & J. Dandapat (2014) Long term curcumin treatment modulates p53 expression in testis of hypothyroid rats. in International symposium on genetic analysis: translational and developmental & Annual meeting of Society of Biotechnologists (India), November 21-23, 2014.
5. Anita Roy & J. Dandapat (2014) Persistent curcumin treatment ameliorates 4-Hydroxynonenal (4HNE) induced protein carbonylation in neonatal hypothyroid rat testis. In: 83rd annual meeting of Society of Biological Chemists (INDIA) Evolution: Molecules to life December 18-21, 2014.
6. Anita Roy & J. Dandapat (2014) Curcumin failed to modulate altered oxidative stress marker in PTU induced neonatal hypothyroid rat testis. In: National conference on current trends in life science research and challenges ahead. 28th feb-2nd March, 2014, Sambalpur University, Sambalpur.
7. Anita Roy & J. Dandapat (2014) Neonatal hypothyroidism induces serum 4-hydroxy-2-nonenal (4-HNE), a bioactive oxidative stress marker, in male rats and its regulation by curcumin. In: National symposium on emerging trends in Biotechnology: present scenario and future dimensions. 29th-30th March, 2014, Utkal University, Bhubaneswar.
8. Suresh Kumar Bunker, G. B. N. Chainy, J. Dandapat. (2014). "Comparative study of methylation pattern of catalase promoter in liver, kidney and cerebral cortex tissues of male rats during aging." National symposium on Emerging trends in Biotechnology: Present scenario and future dimensions. March 29 th-30th, 2014. Organized by P.G. Department of Biotechnology, Utkal University, Bhubaneswar, Odisha.
9. Suresh Kumar Bunker, G. B. N. Chainy, J. Dandapat (2014) "PTU induced Neonatal Hypothyroidism Modulates Methylation Pattern of Catalase Promoter in Rat Liver". International Symposium on Genetic Analysis Translational and Developmental and Annual Meeting of Society for Biotechnologists (India). November 21st to 23rd, 2014. Organized by Department of Zoology, University Of Burdwan.
10. G. B. N. Chainy, Suresh Kumar Bunker, J. Dandapat (2014). "Down regulation of hepatic catalase in PTU- induced hypothyroid rats is due to promoter methylation. 84th

Annual Session of the National Academy of Sciences, India. 04-06 December, 2014.
Organized by Jai Narayan Vyas University, Jodhpur (B/85/2014).

11. Suresh Kumar Bunker, G. B. N. Chainy, J. Dandapat “Neonatal Persistent Hypothyroidism Modulates Rat Hepatic DNA Methyltransferase 3b (DNMT 3b) Expression in Adulthood. 83rd Annual Meeting of the Society of Biological Chemists of India. 17-21 December 2014. Organized By KIIT University Bhubaneswar, Institute of Life Sciences, Bhubaneswar and NISER Bhubaneswar.

12. S. Kumar, A. K. Hati, G. B. N. Chainy, L.K. Nanda, J. Dandapat (2014). “Effect of homoeopathic preparations of Rauwolfia serpentina on deoxycorticosterone acetate (DOCA)-salt induced hypertensive rats” National Conference on Ethnopharmacology and Biotechnology in Drug Development: Prospects and Challenges. November 2014. Organized by Bundelkhand University, Jhansi and Society for Ethnopharmacology, India.

13. Sandeep Kumar, Akshaya Kumar Hati, Jagdishwar Dandapat, Gagan B. N. Chainy, Laxmikanta Nanda Effect of homoeopathic preparations of Rauwolfia serpentina on deoxycorticosterone acetate (DOCA)-salt induced hypertensive rats. National Conference on Current trends in Life sciences research and challenges ahead. Organized by School of Life sciences, Sambalpur University, Sambalpur.

14. S. Sahu, A. Dutta, J. Dandapat, N. Mohanty (2014). Effect of micronutrients on growth response and antioxidant defense system of silkworm *Antheraea mylitta*. National Conference on Current trends in Life sciences research and challenges ahead. Organized by School of Life sciences, Sambalpur University, Sambalpur.

15. Sandeep Kumar, Akshaya Kumar Hati, Jagdishwar Dandapat, Gagan B. N. Chainy, Laxmikanta Nanda (2014) “Expression of antioxidant enzymes in cardiac tissue of deoxycorticosterone acetate (DOCA)-salt induced hypertensive rat: Effect of homoeopathic preparations of Rauwolfia serpentina.” National symposium on Emerging trends in Biotechnology: Present scenario and future dimensions. March 29th-30th, 2014. Organized by P.G. Department of Biotechnology, Utkal University, Bhubaneswar. Odisha.

16. Sandeep Kumar, Akshaya Kumar Hati, G. B. N. Chainy, Laxmikanta Nanda, Jagdishwar Dandapat (2014) “Modulation of rat kidney SOD expression by homoeopathic preparations of Rauwolfia serpentina on deoxycorticosterone acetate (DOCA)-salt-induced hypertensive rats.” 83rd Annual Meeting of the Society of Biological Chemists of India. 17-21 December 2014. Organized By KIIT University Bhubaneswar, Institute of Life Sciences, Bhubaneswar and NISER Bhubaneswar.

17. S. Sahoo, J. Dandapat, G.B.N. Chainy (2014) “Alteration of Bax expression in seminiferous tubule cells of neonatal hypothyroid wistar rats.” 83rd Annual Meeting of the Society of Biological Chemists of India. 17-21 December 2014. Organized By KIIT University Bhubaneswar, Institute of Life Sciences, Bhubaneswar and NISER Bhubaneswar.

18. S. Sahu, A. Dutta, J. Dandapat, N. Mohanty (2014). "Selenium modulates antioxidant defense response in the mid gut tissues of Vth instar larvae of *Antheraea mylitta*." National seminar Organized by Department of Zoology, North Orissa University.

19. S. Jena, B Patra, S. Sah, J. Dandapat, GBN Chainy (2014) "Curcumin ameliorates oxidative stress without modulating the expressions of antioxidant enzymes in 6-n-propylthiouracil (PTU)-induced hypothyroid rat testes." National symposium on Emerging trends in Biotechnology: Present scenario and future dimensions. March 29th-30th, 2014. Organized by P.G. Department of Biotechnology, Utkal University, Bhubaneswar, Odisha.

20. A. Sahoo, S. Sahu, A. Dutta, J. Dandapat, L. Samanta (2014) "Tissue and sex specific redox status and antioxidant defenses during pupal diapause of *Antheraea mylitta*." National symposium on Emerging trends in Biotechnology: Present scenario and future dimensions. March 29 th-30th, 2014. Organized by P.G. Department of Biotechnology, Utkal University, Bhubaneswar, Odisha.

21. A. Dutta, S. Sahu, I. Das, A. Datey, J. Dandapat (2014). "Immune response and antioxidant defense status in the larvae of tasar silk worm, *Antheraea mylitta*. challenged with *Escherichia coli*". International Symposium on Genetic Analysis: Translational and Developmental & Annual Meeting of Society for Biotechnologists (India). November 21-23, 2014 organized by Department of Zoology, The University of Burdawn.

22. P.R. Debata, D. Kumar, D. Rout, P.K. Nayak, J. Dandapat.(2014). "Curcumin and Ellagic Acid synergistically induce p53 accumulation and apoptosis in HeLa cervical carcinoma cells." International Symposium on Genetic Analysis: Translational and Developmental & Annual Meeting of Society for Biotechnologists (India). November 21-23, 2014, organized by Department of Zoology, The University of Burdawn.

23. Suresh K Bunker, U Subudhi, J Dandapat, G.B.N. Chainy. (2013). "DNA methylation pattern of rat liver catalase promoter is modified by aging and neonatal Hypothyroidism". First International and Third National Conference on Biotechnology, Bioinformatics and Bioengineering. June 28-29 2013. Organized by Society for Applied Biotechnology (India), Sri Venkateswara University, Tirupati, Andhra Pradesh India. Pp 46.

24. Suresh K Bunker, U Subudhi, J Dandapat, G.B.N. Chainy. (2013) "Aging Modulates methylation pattern of catalase promoter of rat liver". National Conference on Emerging Trends and Challenges in Basic and Translational Research in Biochemistry. February 4-5, 2013. Organized by Under the auspices of Centre of Advanced Study, Department of Zoology, Banaras Hindu University, Varanasi UP India.

25. A. Sahoo, S. Sahu, J. Dandapat and L. Samanta (2013) Oxidative damaged products, Level of Hydrogen Peroxide and Antioxidant protection in Diapausing pupa of tasar silkworm, *Antheraea mylitta*: A comparative study in two voltine groups. National Symposium on recent advances in beneficial insects. November 27-29, 2013. Organized by Indian Institute of Natural Resins and Gums (IINRG) and SANRAG, Ranchi.

26. A. Dutta, S. Sahu, J. Dandapat and N. Mohanty (2013) Foliar supplementation of ascorbic acid and Glycine modulate antioxidant defence components in the larvae of tasar silkworm, *Antheraea mylitta*. National Symposium on recent advances in beneficial insects. November 27-29, 2013. Organized by Indian Institute of Natural Resins and Gums (IINRG) and SANRAG, Ranchi.

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Other articles

- Popular science articles on "Horseshoe crab" in two Oriya dailies, The Dharitri and The Sambad.
- Life cycle of *Macrobrachium rosenbergii* Pillai, B.R. and Dandapat, J.
- Training manual on Breeding and Hatchery Management of *Macrobrachium rosenbergii*, pp. 6-7, 6th-15th October 1998, organised by CIFA.
- Hatchery Technology of *Macrobrachium rosenbergii* Rao, K.J., Pillai, Bindu. R., Sinha, M.K. Tripathy, A.P. and Dandapat, J.
- Training manual on Breeding and hatchery Management of *M. rosenbergii*, pp. 8-12, 6th-15th October 1998, organised by CIFA.
- Role of Vitamins and Minerals in Prawn Aquaculture (Training manual on Breeding and Hatchery Management of *Macrobrachium rosenbergii*, pp. 24-29, 6th-15th October 1998, organised by CIFA) Dandapat, J. and Das, A.
- Baigyanik Prathayee Galda Chingdir Chas (Scientific prawn culture – A technical book in Bengali language). Dandapat, J., Sinha, M.K., Dutta, T. and Rao, K.J. 2000, CIFA–ICAR.

Invited Talk in Conference / seminar

1. International Symposium on Genomics in Aquaculture, “Beyond genomics: Epigenomic in aquaculture and the way forward”, organized by the ICAR-Central institute of fresh water Aquaculture in collaboration with association of Aquaculturists during 21st-23rd February, 2020.
2. National Conference on Biotechnology: Prospective and Challenges, “Remodeling Redox Regulatory Network In Silk Worm : Insights From Proteomics And Systems Biology” organized by Department of Biotechnology, under quality improvement programme, Savitribai Phule University, Pune during 14th-15th February, 2020.
3. Annual Meeting of the Society for Free Radical Research. India & Conference on “Role and Management of Oxidative stress in Human Disease” (SFRR-INDIA-2020), “Hepatic epigenetic changes in the adult male rats under altered thyroid state: Impact of natural antioxidant curcumin” organized by Bio-Science group, Bhaba Atomic Research Centre, Mumbai during 12th-13th February, 2020.
4. Oxidative stress induced in rat brain by altered thyroid hormone titer is rescued by curcumin. Resource person in Neuroscience International Conference on Translational Neuroscience & Its Application in protection of Mental Health. In 13 XXXV Annual Meeting of Indian Academy of neuroscience organized by Ravenshaw University on 29-31, Oct., 2017.
5. Proteomics in the era of Omics. Resource person in National Seminar on Emerging trends in Biotechnology and crop improvements organized by Department of Biotechnology, Rama Devi Women's University, Bhubaneswar, Odisha, India from 21st to 22nd November, 2017.

6. Redox homeostasis: a cross talk between oxidative defenses and immune response. UGC Sponsored National Seminar on current approaches in life Science. M.P.C Autonomous College, Baripada, 21-22 March, 2015.
7. PTU induced Neonatal Hypothyroidism Modulates Methylation Pattern of Catalase Promoter in Rat Liver. Symposium Lecture in the International Symposium on Genetic Analysis Translational and Developmental and Annual Meeting of Society for Biotechnologists (India). Organized by Department of Zoology, The University of Burdwan on November 21st to 23rd, 2014.
8. Exciting World of Biology. Invited talk in the inspire programme cum Residential Science camp for School and College students. Organised by Vidyasagar University and sponsored by Dept of Science and Technology, Govt. Of India and Govt. Of West Bengal on June 26, 2014.
9. Oxidative challenges and antioxidant protection in aquatic organisms: from biomarkers to health management. Invited lecture in the International Symposium on Problem and prospects of coastal aquaculture and application of biotechnological tool for the rural development. Organised by Vidyasagar University, sponsored by DBT, Govt of India, UGC New Delhi on March 1-3, 2013.
10. DNA methylation and histone modification: Impact on Epigenetics. Delivered lecture in the National workshop on Hands on DNA technologies. Nagarjuna Postgraduate College of Science, Raipur sponsored by UGC, New Delhi on January 8-11, 2013.
11. Biofertilizers. Invited Talk in the National Seminar on sustainable development through the use of Biofertilizers. AUL College, sponsored by UGC, New Delhi on January 5-6, 2013.
12. Organic Farming. Invited talk in the State level seminar on Biotechnology and Organic Farming. Dept of Botany, Balikuda College, Jagatsinghpur sponsored by UGC, New Delhi on March 4-5, 2012.
13. Body's Battle. Delivered lecture in the Science Seminar. Gopabandhu Science College, Athagarh on February 8, 2012.
14. Ameliorative Effect of Curcumin on the expression of Superoxide dismutase and level of Lipid Peroxidation in cerebral cortex of hypo and hyperthyroid rats. Delivered talk in the International conference on Biotechnology Advances: OMICS, Approaches and way forward. SOA University, Bhubaneswar on December, 20-22, 2012.
15. Defence system of the Body. Delivered lecture in the Seminar organized by Science Society. Seemanta Mahavidyalaya, Jharpokhria on February 19, 2011.
16. Insect Diapause: Can hydrogen peroxide be a potent regulator. Invited lecture in the Regional Biochemical Symposium organised by Society of Biological chemistry, India and NISER, Bhubaneswar on September 3, 2011.
17. Invited lecture in the International Level Seminar on Problems and Prospects of Coastal Aquaculture and Application of Biotechnological Tools For Rural Development organized by Department of Aquaculture Management & Technology, Vidyasagar University, Midnapore, West Bengal, India from 1st – 3rd March, 2013.
18. Participated in 99th Indian science Congress on Science and Technology for Inclusive Innovation: Role of Women organized by KIIT and NISER, Bhubaneswar from 3rd January 2012 to 7th January 2012.
19. Participated in 1st meeting of Indian Immunological Society-Odisha Chapter organized by NISER and ILS, Bhubaneswar, Odisha on August 11, 2012.

20. Participated in XXXV All India Cell Biology Conference (AICB) & Symposium on Membrane dynamics and Disease organized by NISER, Bhubaneswar from 16th-18th December 2011.
21. Participated in International Brainstorming meet 2011 on Recent Advances in Fish Reproductive Physiology organized by CIFA, Kausalyaganga, Bhubaneswar on 16.08.2011.
22. Participated in ICAR, New Delhi sponsored Winter School on Recent Advances in Fish & Shell fish Immunology and its application organized by CIFA, Kausalyaganga, Bhubaneswar from 21.10.2008 to 10.11.2008.
23. Idea generation workshop in Aquaculture Biotechnology during 26-27 September, 2007 organised by Central Institute of Freshwater Aquaculture, Bhubaneswar and sponsored by Department of Biotechnology, Government of India.
24. Participated in a training programme on "Molecular techniques in Animal disease diagnosis" organized by National Biotechnology Centre, Indian Veterinary Research Institute, Izat Nagar, Bareilly from 09th March to 29th March, 2004.
25. Participated in a short term training course cum workshop on "Electrophoresis Techniques" held in the Electrophoresis Institute, Yercaud, Tamilnadu from 27.05.2002 to 01.06.2002.
26. Undergone a training programme on "Breeding and Hatchery Management of Carps" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar from 06.06.2000 to 14.6.2000.
27. Undergone a training programme on "Reproductive Physiology of Carp and Catfishes" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar, from 27th July to 1st August, 1998.
28. Undergone a training programme on "Aquatic Microbiology" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar, from 17th May to 23rd May, 1994.

Technical Expertise:

- Practical knowledge on: Routine Biochemical Analysis of various biological samples, Enzymatic Studies, Studies on oxidative stress and antioxidant biology, Electrophoresis and blotting Techniques, Isolation of DNA, RNA, Immuno techniques and PCR, RT-PCR, HPLC.
- Generation of Brood-stock of *Macrobrachium rosenbergii* in captivity and culture of freshwater prawn adopting mono and polyculture system.
 - Nutritional manipulation and health management of freshwater prawn, fishes and silkworm.

Awards/ Honours/ Fellowships Received:

- Post Doctoral Fellowship sponsored by Dept. of Biotechnology, Govt. of India by selection committee for DBT-Post Doctoral Fellowship held in Indian Institute of Science, Bangalore in 2002.
- Orissa Young Scientist Award for the year 1999 from Department of Science & Technology, Govt. of Orissa for significant contribution in the field of Life Sciences.
- Best paper (poster) presentation award from Indian Science Congress Association in 86th Indian Science Congress held at Chennai in January 1999.
- Best research scholar award for the year 1998 in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar.

- National Scholarship received from Govt. of India for studying M.Sc. in the year 1990.

Professional Experience and Previous Positions held

a. Teaching:

- Professor in P.G. Department of Biotechnology, Utkal University since February-2015.
- Reader in P.G. Department of Biotechnology, Utkal University, VaniVihar, Bhubaneswar from March 2010 to February 2015.
- Lecturer (Assistant Professor Stage II) in P.G. Department of Zoology, North Orissa University, Takatpur, Baripada from August 2008 to March 2010.
- Lecturer (Assistant Professor Stage I) in P.G. Department of Zoology, North Orissa University, Takatpur, Baripada from August 2004 to August 2008.
- Lecturer (Consolidated) in P.G. Department of Biotechnology, North Orissa University, Takatpur, Baripada from October 2002 to August 2004.
 - Worked as Resource Person in the Department of Biotechnology, North Orissa University, Takatpur, Baripada.
- Associated with the P.G. teaching program in Biotechnology running in the P.G. Dept. of Botany, Ravenshaw College, Cuttack, as guest faculty, during the academic session 2001-2002.
- Associated with the teaching program in P.G. Diploma in Clinical Biochemistry and Medical Biotechnology, running in the Center for Biotechnology at P.G. Dept. of Zoology, Utkal University, Bhubaneswar, from June 2000 to June 2002.
- Visiting faculty in Guru Ghasidas University, Bilaspur, Chhatisgarh in 2001.
- Technical Officer (from December 1997 to 31st March 2000) in Technology Project in Mission Mode on Semi-intensive Prawn Aquaculture (MMPA) funded by DBT, Govt. of India in Central Institute of Freshwater Aquaculture (CIFA-ICAR), Kausalyaganga, Bhubaneswar.
- Senior Research Fellow (from December 1994 to November 1997) in Technology Project in Mission Mode on Semi-intensive Prawn Aquaculture (MMPA) funded by DBT, Govt. of India in Central Institute of Freshwater Aquaculture (CIFA-ICAR), Kausalyaganga, Bhubaneswar.

b. Workshops/ Training Programmes Attended

- Participated in DST sponsored workshop on Basic and Advanced proteomic Approaches organized by IIT Bombay from 15 – 26 February, 2021.
- Participated in ICAR, New Delhi sponsored Winter School on Recent Advances in Fish & Shell fish Immunology and its application organized by CIFA, Kausalyaganga, Bhubaneswar from 21.10.2008 to 10.11.2008.

- Idea generation workshop in Aquaculture Biotechnology during 26-27 September, 2007 organised by Central Institute of Freshwater Aquaculture, Bhubaneswar and sponsored by Department of Biotechnology, Government of India.
- Participated in a training programme on “Molecular techniques in Animal disease diagnosis” organized by National Biotechnology Centre, Indian Veterinary Research Institute, Izat Nagar, Bareilly from 09th March to 29th March, 2004.
- Participated in a short term training course cum workshop on “Electrophoresis Techniques” held in the Electrophoresis Institute, Yercaud, Tamil Nadu from 27.05.2002 to 01.06.2002.
- Undergone a training programme on "Breeding and Hatchery Management of Carps" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar from 06.06.2000 to 14.6.2000.
- Undergone a training programme on "Reproductive Physiology of Carp and Catfishes" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar, from 27th July to 1st August, 1998.
- Undergone a training programme on "Aquatic Microbiology" in Central Institute of Freshwater Aquaculture (ICAR), Kausalyaganga, Bhubaneswar, from 17th May to 23rd May, 1994.

Patents/Product Commercialisation:

- Contributed for “Formulation and Commercialization of indigenous feed for different life stages of freshwater prawn” developed at Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar.
- Contributed for development of anti-transferrin antibody and commercialization of the product by Abgenex India Ltd. which was released by Honorable Minister, Ministry of Education and Ministry of Skill Development and Entrepreneurship at Utkal University, Vanivihar, Bhubaneswar.

Members in Academic Committees and Policy making bodies:

1. Member-Advisory committee DBT-Star College Programme, Salepur College, Odisha.
2. Executive council member, Odisha Bigyan Academy, Govt. of Odisha from 2018.
3. Chairman-Board of studies in Biotechnology, Utkal University, Bhubaneswar, 2010-2017.
4. Member-Academic Council-Utkal University, Bhubaneswar 2010–2017, since 2019.
5. Member-Subject Research Committee, Biotechnology, Utkal University since 2010 and chairman, subject research committee, Biotechnology, Since 2017.
6. Member-Academic Committee, Institute of Life Sciences, Bhubaneswar (2010-2011).
7. Member-Task force committee on Biotechnology, DST, Govt. of Odisha.
8. Member-Committee for setting up of Biotechnology Incubation Center in Konark Knowledge Park, DST, Govt. of Orissa.
9. Member-Biosafety Committee Central Rice Research Institute, Cuttack as DBT-Govt. of India nominee.
10. Member-Advisory committee DBT-Star College Programme, N.L. Khan College, Midnapur, West Bengal.
11. Member-Board of Studies in Zoology and Life Sciences, Utkal University.
12. Member-Board of Studies in Biotechnology, Ravenshaw University (2010-2011).
13. Member-Board of Studies in Biotechnology, North Orissa University, Baripada (Since 2011).

Administrative / Executive experience:

- Officer on Special Duty, New Campus, Utkal University (April 2018-February 2021)
- Overall administration of the Department as Head from 2010-2017 and since 2019.
- Course Coordinator for M.Sc. Biotechnology programme supported by DBT, Govt. of India under DBT-HRD programme from 2010-2017 and since 2019.
- Executive member of Odisha Bigyan Academy, DST, Government of Odisha from 2018.
- Coordinator, Centre of Excellence in integrated OMICs and Computational Biology from 2018.
- Coordinator, Platinum Jubilee distinguished Lecture Series, Utkal University.
- Other administrative responsibilities as assigned by University Authority from time to time.

Conferences organized as Organizing Secretary:

- National Symposium on Emerging trends in Biotechnology: Presents scenario and future dimensions on 29th and 30th March, 2014.
- UGC-sponsored skill development work shop on “Determination of protein content in biological sample” 19th and 20th November, 2015.

Evaluation of Ph. D. thesis from

- Maulana Abul Kalam Azad University of Technology, West Bengal
- Vidyasagar University, Midnapur
- Central University of Jharkhand, Ranchi
- Goa University,
- University of Calcutta,
- Guru Nanak Dev University, Amritsar
- Barkatulla University, Bhopal
- University of Burdwan, JNU, New Delhi; Bhartiya University; D D University, Gorokhpur.

Reviewer/Editorial Board

- Reviewer of various peer reviewed journals from Elsevier, Springer, Wiley, RSC Advance.
- Guest editor, Special Volume of Frontiers Immunology.

Professional Membership

- Life member of “The Indian Science Congress Association”.
- Life Member of “Association of Gerontology, India”.
- Life Member of “Biotechnology Society of India”
- Life Member of “Indian Society of Cell Biology”
- Life Member of “Society for Free Radical Research India”
- Life Member of “Society of Biological Chemists India”
- Life member of “Association of Aquaculturists”, Kausalyaganga, Bhubaneswar, India.



Dr. Jyotsnarani Pradhan, M.Sc. Ph.D.

Designation and Current positions:

- Assistant Professor Stage-II
- Co-coordinator, CoE- ECCPH, RUSA, , 2020-cont

Phone No: 9853411916

E-mail ID: jyotsna.biotech@utkaluniversity.ac.in;
jyotsna017@gmail.com

Area of Research:

- Phytotherapy
- Biochemistry and Molecular biology
- Applied microbiology

Courses Taught:

Cell & Molecular Biology, Biomolecules, Biochemistry, Animal cellculture and Recombinant DNA Technology.

Educational Qualification:

Degree	Subject	Institution/Board	Year
PhD	Biotechnology	Utkal University, Bhubaneswar, Orissa, INDIA	2012
M. Sc.	Biotechnology	Utkal University, Bhubaneswar, Orissa, INDIA	2005
B. Sc.	Zoology, Botany, Chemistry	Sambalpur University, Sambalpur, Orissa, INDIA	2002

Research Guidance:

- Poonam Das, Ph.D. (Regd. No.: 01-Biotechnology 2020-2021; Utkal University)-Topic: Molecular Cloning and Characterization of a Novel Microbial Chitin Deacetylase in Improved Production of Chitosan with Bio Adsorption Efficiency, (Continuing)
- Manisha Hota, M.Phil. (Utkal University)- Topic: Isolation, characterization and screening of bioactive compounds with UV protective and antioxidant potential from *Gracilaria verrucosa* of Chilika lake.
- Bristy Ganguly, M.Phil. (Utkal University) Topic: Evaluation of antioxidant activity of extract prepared from red algae *Gracilaria verrucosa* in lipopolysaccharide stimulated RAW 264.7 macrophages 2021.
- Asmita Priyadarshini, Project Fellow (WB-OHEPEE) Topic: Evaluation of anti-inflammatory and immunomodulatory activity of red algae *Gracillaria verrucosa*.
- Deepak Pradhan, Project fellow (DST, Orissa) Topic: Signature of redox regulatory proteins, transcription factor and Biological clock genes in hypothyroid rat: impact of Time restricted feeding (TRF) and Curcmin.
- M.Sc. Project/Dissertation; **25 Nos**

Research Collaboration and Projects undertaken:

- Project entitled “Signature of DNA methylation machinery in the brain of propyl thiouracil (PTU)-induced hypothyroid rat: Effect of green tea catechins. Funded by DST, Govt. of Odisha (Co-PI) (2018-2021)
- Project entitled “Isolating, characterization and screening of bioactive compounds with UV-Protective and antioxidant potentials from the red algae, *Gracilaria verrucosa* from chilka lake” funded by Odisha State Higher Education, Council, Government of Odisha (PI) 2021-2023.
- Project entitled “Efficacy of homoeopathic medicines (30 c) on propylthiouracil (PTU)-induced hypothyroid rat” funded by AYUSH, Govt of India (Co-PI) (2019-2023) (On going)
- Project entitled “Evaluation of anti-inflammatory and Immunomodulatory potential of red alga *Gracilaria verrucosa*” funded by WB-OHEPEE Program Utkal University, Odisha, (PI) (2022-2023) (on going)
- Project entitled “Signature of redox regulatory proteins, transcription factors and Biological clock genes in hypothyroid rat: impact of Time Restricted Feeding (TRF) and curcumin” funded by DST. Govt. of Odisha. (PI) (2022-2025) (On going)

Research Publications:

Journal Articles:

- Nayak M, Das D, Pradhan J, Ahmed RG, Laureano-Melo R, Dandapat J. Epigenetic signature in neural plasticity: the journey so far and journey ahead. **Heliyon**. 2022 Dec 19:e12292.
- Rath S, Chakraborty D, Pradhan J, Khan MI, Dandapat J. Epigenomic interplay in tumor heterogeneity: Potential of epidrugs as adjunct therapy. **Cytokine**. 2022 Sep 1;157:155967.
- Jena AB, Samal RR, Kumari K, Pradhan J, Chainy GB, Subudhi U, Pal S, Dandapat J. The benzene metabolite p-benzoquinone inhibits the catalytic activity of bovine liver catalase: A biophysical study. **International journal of biological macromolecules**. 2021 Jan 15;167:871-80.
- Mohanty C, Pradhan J. A human epidermal growth factor-curcumin bandage bioconjugate loaded with mesenchymal stem cell for in vivo diabetic wound healing. **Materials Science and Engineering: C**. 2020 Jun 1;111:110751.
- Pradhan J, Mohanty C, Sahoo SK. Protective efficacy of crocetin and its nanoformulation against cyclosporine A-mediated toxicity in human embryonic kidney cells. **Life Sciences**. 2019 Jan 1;216:39-48.
- Bunker SK, Dutta A, Pradhan J, Dandapat J, Chainy GB. Curcumin restores hepatic epigenetic changes in propylthiouracil (PTU) Induced hypothyroid male rats: A study on DNMTs, MBDs, GADD45a, C/EBP- β and PCNA. **Food and Chemical Toxicology**. 2019 Jan 1;123:169-80.

- Sahu S, Dutta A, Ray DK, Pradhan J, Dandapat J. Host plant-derived allelochemicals and metal components are associated with oxidative predominance and antioxidant plasticity in the larval tissues of silkworm, *Antheraea mylitta*: Further evidence of joint effects hypothesis. **Comparative Biochemistry and Physiology Part B: Biochemistry and Molecular Biology**. 2018 Sep 1;223:39-49.
- Rautray P, Pradhan J, Samanta L, Antioxidant and hepatoprotective properties of macroalga *Chaetomorpha linum* against experimentally induced oxidative stress, 2016, *International Journal of Recent Scientific Research* 7, 7, 12688-12691.

Book Chapter:

- Ganguly B, Hota M, Pradhan J. Skin aging: implications of UV radiation, reactive oxygen species and natural antioxidants. London, UK: IntechOpen; 2021 Sep 19.

Conference Proceedings:

- Paper presented on “Enhanced antioxidant activity of Crocetin loaded nanoparticles: A nanomedicinal approach for cancer therapy” at fourth International Symposium on translational cancer research: Recent developments in cancer prevention, Udaipur, Rajasthan, India, December 16th-19th, 2011.
- Paper presented on “Optimization of Hydrogen Peroxide Determination in Biological samples Using Ammonium ferrous sulfate and Xylenol orange Reagent” at 85th Annual Session of National Academy of Sciences, India (NASI) & Symposium on Marine and Freshwater Ecosystem for National Development, KIIT, Bhubaneswar, Odisha, 6th - 8th December 2015.
- Paper presented on “A sensitive microplate based method for the determination of Hydrogen peroxide in biological samples by mFOX reagent” at National Seminar on Recent Trends in Microbiology and Biotechnology organized by Department of Biotechnology, MITS School of Biotechnology and Society of Biotechnology and Bioinformatics Bhubaneswar, Odisha. 16th and 17th March, 2018.
- Paper Presented on “A sensitive microplate based method for the estimation of hydrogen peroxide in biological sample by mFOX Reagent” at National seminar on future India: Science & Technology jointly organized by Indian Science Congress Association (ISCA) Bhubaneswar Chapter and KIIT Deemed to be University and KISS deemed to be University, Bhubaneswar on 1st-2nd February, 2019.
- Participated in National Seminar cum Workshop on “Proteomics in Public Health”, sponsored by World Bank-Odisha Higher Education Program for Excellence and Equity, organized by P.G. Department of Biotechnology, Utkal University, Bhubaneswar, Odisha. 15th and 16th March, 2019.
- Paper Presented on ‘Antioxidative and UV protective potential of red alga *Gracilaria verrucosa* from Chilika lake’ at National Conference On Recent Advances in Energy, Environment and Health Sciences (RAEEHS-2019) organized by Department of Chemistry, ITER, Siksha ‘O’ Anusandhan, Deemed to be university, Bhubaneswar, Odisha on October 18-19, 2019.

- Paper Presented on “Antioxidant and Photoprotective Properties of Mycosporine Like Amino Acids from Red Alga, *Gracilaria verrucosa* of Chilika Lake” at 17th Annual Meeting of the Society for Free Radical Research India (SFRR-INDIA-2020) & International Conference on “Role and Management of Oxidative Stress in Human Disease” organized by Society For Free Radical Research-India & Bhabha Atomic Research Centre, Mumbai on February 12-15, 2020.
- Participated and paper submitted “Attenuation of UVB-induced oxidative damages in 3T3 fibroblast cells by ethanolic extract of red alga *Gracilaria verrucosa*” in the International Virtual Conference, *Emerging Frontiers in Healthcare and Delivery* (EFHD-2020), held on September 12-14, 2020, organized by Department of Biology, School of Applied Science at Kalinga Institute of Industrial Technology (KIIT) Deemed to be University, Bhubaneswar, Odisha, India.
- Participated and paper submitted “Antioxidant and photoprotective activity of ethanolic extract of *Gracilaria verrucosa* against UVB-induced oxidative damages in 3T3 fibroblast cells” in the International Conference on Emerging Trends in Biotechnology (ICETB) organized by School of Bio Sciences and Technology, Vellore Institute of Technology along with Association of Biotechnology and Pharmacy, from December 14-16, 2020.

Technical Expertise:

- Practical knowledge on: Routine Biochemical Analysis of various biological samples, Enzymatic Studies, Studies on oxidative stress and antioxidant biology, Electrophoresis and blotting Techniques, Isolation of DNA, RNA, Immuno techniques and PCR, RT-PCR, HPLC.
- Cell culture facilities.
- Biochemical analysis.

Awards/ Honours/ Fellowships Received:

- Awarded with DBT- Research Associateship by Department of Biotechnology, Govt. of India
- Awarded with Utkal University Seed grant for Research and Innovation
- Awarded with Odisha University Research and Innovation Incentivisation Plan (OURIIP) Seed Grant for research and Innovation
- Best poster award (1st prize) in Biological Sciences at Odisha Research Scholar Conclave-2021 jointly organized by Higher Education Council Govt. of Odisha and Utkal University.

Professional Experience and Previous Positions held

a. Teaching and Research:

- **February 2019- Continuing:** Assistant professor Stage-II at Department of Biotechnology, Utkal University, Bhubaneswar, Odisha, giving lectures to masters, M.Phil. And Ph.D. students, guiding students in project/ Research works.

- **February 2015- February 2019:** Assistant professor Stage-I at Department of Biotechnology, Utkal University, Bhubaneswar, Odisha, giving lectures to masters, M.Phil. And Ph.D. students, guiding students in project/ Research works.
- **June 2011-June 2013:** Postdoctoral Fellow (DBT-Research Associates) at Institute of Life Sciences, Bhubaneswar, Odisha, India (Topics: ‘Development of scaffold-based 3D glioblastoma tumor model for in vitro assessment of anticancer drugs loaded in nanoparticles for better therapeutic efficacy’)
- **July 2007- March 2012:** PhD from Utkal University Govt. of India, Bhubaneswar, Odisha, India.(Thesis Title:).
- **December 2006-June 2007:** BCIL Trainee at Tectona Biotech, Bhubaneswar (Topics: “Plant tissue culture: Application and practice of in vitro response to hybrid plantlets multiple auxiliary shoot proliferation of banana *Musa paradisiaca*”)

b.Workshops/ Training Programmes Attended

- Participated in 3 weeks online hands-on workshop on Course 1: Target Development, Course 2: Drug Development, Course 3: Drug Screening organized jointly by Crescent Innovation & Incubation Council (CIIC), Chennai & Hains Biosolutions, Chennai Dt. 20-22 May, 2021, 27-29, May, 2021 & 3-5 June, 2021.
- Participated in Department of Science and Technology sponsored 2- weeks workshop on “Basic and Advanced Proteomics Approaches” organized by IIT Bombay from 15 -26 February 2021.
- Participated in virtual workshop on “Sars-CoV-2 Diagnosis By Real-time PCR” Organised jointly by Immugenix Biosciences (IGB), Chennai & Crescent Innovation & Incubation Council (CIIC), Chennai on 30th May 2020.
- Participated in virtual hands-on workshop on Primer and Probe Designing held on 27th-May 2020 at ImmuGenix Biosciences Pvt Ltd, Chennai.
- Participated in the Live Workshop entitled “Foldscope Microscope – Sample Preparation and Digital Documentation” on 25.08.2020, organized by Centre for Molecular and Nano medical Sciences, Sathyabhama Institute of Science and Technology, Chennai.
- Participated in hands-on training workshop on “Basic Cell Culture Technology” from October 22nd – 25th, 2019, at National Center for Cell Science (NCCS), Pune. India.
- Participated in DBT sponsored workshop on “Cloning and identification of abiotic stress-induced gene” held at Institute of Life science, Bhubaneswar from 11th -15th March 2008.
- Participated in seminar-cum-workshop on “Freshwater algae and their utilization” at the P.G. Department of Biotechnology, Utkal University on 18th& 19th May 2007.

Patents:

- Samanta L, Jena SR, **Pradhan J** and Adhikary SP Process for Developing Seaweed Extract and Composition useful against UV Radiation, Oxidative Damage and Skin Cancer **Australia:** 2021104442; **Indian Patent Application Number:**202131031982 (Published dt 25.11.2022)

Reviewer/ Editorial Board:

- Reviewer in Frontiers in Pharmacology
- Editorial Board Member of the journal “Frontiers in Medical Technology”

Professional Membership:

- Life member of Society of Free Radical Research (SFRR), India
- Life member of Proteomics Society of India (PSI)
- Life member of Indian Science Congress Association (ISCA)
- Life member of Association of Gerontology (INDIA)
- Life member of Indian Gerontological Association (IGA)
- Life member of Odisha Bigyan Academy (OBA)



Name: **Dr. Sanatan Majhi, B.V. Sc, M.V. Sc, Ph.D.**

Designation and current position:

- Assistant Professor
- Assistant Superintendent, Gents Hostel-2, 2018-cont.

Phone no: 9938093250

E-mail ID: sanatan.biotech@utkaluniversity.ac.in

Area of Research:

- Microbiology
- Virology
- Veterinary science

Courses Taught:

Genetics, Biomolecules, Biochemistry, Molecular Biology, Microbiology.

Educational Qualification

Degree	Subject	Institution/Board	Year
PhD	Veterinary Biotechnology	ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh	2017
M.V.Sc.	Veterinary Biotechnology	ICAR-Indian Veterinary Research Institute, Izatnagar, Bareilly, Uttar Pradesh	2010
B.V.Sc.&AH	Veterinary Biotechnology	Odisha University of Agriculture and Technology	2006

Research Guidance:

- Name of the Ph.D. Scholar: Rout Geoge Kerry (Utkal University)
Topic/ Thesis Title: “Evaluation of Bioactive Terpenoid and Flavonoid based silica Nanoparticles against Type-II Diabetes and Associated Nephropathies” (Ph.D. Regd. No: 05-Biotechnology-2017-18)
- Name of the Ph.D. Scholar: Sheela Kumari Sahoo (Utkal University)
Topic/ Thesis Title: “Bioprocess Development, Molecular Characterization and Purification of a Thermostable Protease with Fibrinolytic Potentials” (Ph.D. Regd: No: 02-Biotechnology-2019-20).
- Name of the Ph.D. Scholar: Smruti Malinee Sahoo (Utkal University)
Topic/Thesis Title: “Molecular characterization and analysis of In-vitro assays of

thermostable glutaminase free recombinant L-asparaginase enzyme: A potential anticancer agent” (Ph.D. Regd: No: 01-Biotechnology-2021-22)

- M.Phil candidates: **2 Nos**
- M.Sc. Project/Dissertation; **25 Nos**

Research Collaboration and Projects undertaken:

- “Molecular Expression of Thermostable Glutaminase Free L-Asparaginase Gene from A High Yielding Thermophilic Isolate in E. Coli: A Prospective Recombinant Enzyme For Leukaemia Chemotherapy” [PI, Dr. Sabuj Sahoo, Co-PI, Dr. S.Majhi]
Funding agency: Department of Science and Technology, Government of Odisha.
Amount received: Rs. 8,52, 160/-
- Development of Lateral flow based Immuno-diagnostics for Brucellosis, (PI: Dr. Sanatan Majhi) Funding agency: Odisha State Higher Education, Council, Government of Odisha.

Amount received: Rs. 2,36, 000/-

Research Publications:

Journal Articles:

- Simmi Tomar, Vishesh Kumar Saxena, Kuldeep Dhama, Sandeep Saran, Mahesh Chandra Kataria and Sanatan Majhi. Immuno-modulation under synbiotic supplementation in coloured broilers. Indian Journal of Poultry Science. 47(2): 164-167, ISSN: 0019-5529 (2012).
- S. S. Kullu, Anshu Rahal, S. K. Pradhan, R. K. Yogi, P. R. Shinde, R. A. Patoo, S. Kaushal, S.K. Sinha, S. Majhi, R. K. Bauri and S. Kachhawa.. Effect of zinc coated urea supplementation on feed consumption and growth performance in crossbred calves, Veterinary Practitioner. 16(2): 301-303, ISSN: 9724036 (2015)
- Sanatan Majhi, Sameer Shrivastava, Sonal, Subas Chandra Jena, Priyanka Sharma, Bishnu Prasad Mishra. Seroprevalence of Bovine brucellosis in organized and unorganized farms of Odisha, Indian journal of veterinary medicine. 35(2): 135-136, ISSN: 0970-051X (2015).
- Rout George Kerrya, Santosh Malikb, Yisehak Tsegaye Reddac, Sabuj Sahooa, Jayanta Kumar Patrad, Sanatan Majhia. Nano-based approach to combat emerging viral (NIPAH virus) infection. Nanomedicine: Nanotechnology, Biology and Medicine, 18, 196– 220, ISSN:15499634 (2019).
- Swagatika Parida, Sanatan Majhi*, Voddu Suresh, Sidhartha Sankar Behera, Debiprasanna Das, Abinash Dutta. Immunohistochemistry based approach to study cross reactivity of certain commercially available antibodies with mammary tumor cell proteins of dog, Octa J. Biosci. Vol. 7(2):44-48, ISSN: 2321-3663 (2019)
- Rout George Kerry, Kingsley Eghonghon Ukhurebor, Swati Kumari, Ganesh Kumar Maurya, Sushmita Patra, Bijayananda Panigrahi, Sanatan Majhi, Jyoti Ranjan Rout, María del Pilar Rodríguez-Torres, Gitishree Das, Han-Seung Shinj and Jayanta Kumar Patra *. A comprehensive review on the applications of nano-biosensor-based approaches for non-communicable and communicable disease detection, Biomater. Sci., 9, 3576-3602 (2021).
- Rout George Kerry., Priyanka Mohapatra., Atala Bihari Jena., Bijayananda Panigrahi., Kahnu Charan Pradhan., Bibhu Ranjan Khatua., Subhasis Mahari., Venkateswarlu

Perikala., Bhagaban

Kisan., Moses D. Lugos., Anil Kumar Mondru., Sanjeeb K. Sahoo., Dindyal Mandal., Satyanarayan Pal and Sanatan Majhi, Biosynthesis of Rutin trihydrate loaded silica nanoparticles and investigation of its antioxidant, antidiabetic and cytotoxic potentials, Journal of Inorganic and Organometallic Polymers and Materials. 1-17. (2022).

<https://doi.org/10.1007/s10904-022-02269-1>

Book Articles (Edited):

- Subas Chandra Jena, Priyanka Sharma, Vinod Chandra Pandey, Sanatan Majhi, SaumyaSrivastava, Sonal and B.P.Mishra. Cancer genetics and epigenetics: Two sides of the same coin, Molecular Approaches for Dignosis of Animal Cancers and Strategies for Developing cancer Vaccines, Chapter-8, pp-93.
- Manoj Kumar, Vinod Chandra Pandey, Priyanka Sharma, Subas Chandra Jena, SaumyaSrivastava, Sanatan Majhi, Sameer Shrivastava and Sonal, An overview of Cancers in animal species, Molecular Approaches for Dignosis of Animal Cancers and Strategies for Developing cancer Vaccines, Chapter-22, pp-155.

Conference Proceedings:

- S. Tomar, V.K. Saxena, K. Dhama, S. Majhi and R.P. Singh. “Effects of Symbiotic Feeding on Broiler Performance and Immune Response” in the International symposium of Indian Poultry Science Association, IPSACON, 2011, during 22nd-24th, December, 2011
- S. Majhi*, S. Nagarajan, G. Venkatesh, P. Behera and C. Tosh. “Study on Molecular and Phylogenetic characters of HA gene of H9N2 with respect to their Co-circulation with H5N1 Avian Influenza Viruses isolated from West Bengal in 2008” in the proceedings of XXX Conference & National Symposium of Indian Poultry Science Association conducted by Indian Poultry Science Association and Central Avian Research Institute, Izatnagar-243122 (UP) India, during 22th-23th, November, 2013.
- S. Majhi*, S. Nagarajan, G. Venkatesh, P. Behera and C. Tosh. “Study on Molecular and Phylogenetic characters of Polymerase genes (PA, PB1 and PB2) of H9N2 Avian Influenza Viruses isolated from West Bengal in 2008” in the proceedings of XXXI Annual Conference of Indian Poultry Science Association (IPSACON-2014) and National Symposium on “Poultry production for global trade” organized by Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Sciences University, during 16th-18th October, 2014.
- Sanatan Majhi*, Sameer Shrivastava, Pallab Chaudhari and Bishnu Prashad Mishra, “Development of ELISA based immuno-assay using recombinant p17 and OMP-28 proteins for diagnosis of Brucellosis in cattles” in the 20th Odisha Bigyan 'O' Paribesh Congress (OBPC) organized in NISER, Jatni, Bhubaneswar, on 17th -18th November, 2018.
- Sanatan Majhi* and Janmejy Bagb. “The Impact of Livestock on Climate Change” in the proceedings of International Conference on Bioprocess for Sustainable Environment and Energy (ICBSEE), India, organized by NIT, Rourkela, during 6th -7th December, 2018.
- Ankita Nayak and Sanatan Majhi* “The Impact of Livestock on Climate Change” in the World Bank-Odisha Higher Education Programme for Excellence and Equity (WB-OHEPEE) sponsored National Seminar-cum-Workshop on “Proteomics in Public Health” organized by Department of Biotechnology, Utkal University, on 15th-16th March, 2019.
- Sanatan Majhi, Sameer Shrivastava, Pallab Chaudhari and Bishnu Prashad Mishra, presented paper on the topic “A study on ELISA based immunoassay using recombinant

p17 and OMP 28 proteins for serodiagnosis of Brucellosis” in the 3rd International Conference, SciCon Series on In Sync - With Next Generation Biosciences (SciCon INGB) – 2019, Goa, India, on 6th-8th November, 2019.

- Sanatan Majhi and Janmejy Bag. “Biosensor for detection of hazardous pollutants in environment” in the proceedings of International Conference on Bioprocess for Sustainable Environment and Energy ICBSEE-INDIA-2020, organized by NIT Rourkela, Odisha, 5th -7th March, 2020.
- Rima Samanta, Madhumanti Majhi, Subhshree Priyadarshinee Sahoo and Sanatan Majhi*, "Biodiversity: Driving Future Pandemics" in proceedings of Odisha Environment Congress- 2020, during 20th - 22nd December, 2020.
- Sanatan Majhi*. Development of Lateral Flow based Immjno-diagnostic for Brucellosis” in the Odisha Research Conclave, organised under OURIP, OSHEC, Govt. of Odisha, conducted at Utkal University, Bhubaneswar on 13th-14th November, 2021.
- Smruti Malinee Sahoo, and Sanatan Majhi* “Nullifying Hypersensitivity of L-Asparaginase in Cancer Treatment” in the National Seminar on “Overcoming the Challenges: Role of Science & Technology” conducted during 22nd Odisha Bigyan 'O' Paribesh Congress, organized by Orissa Environmental Society Ravenshaw University, Cuttack on 20th -21st November, 2021
- Sheela Kumari Sahoo, & Sanatan Majhi* “Screening, Bioprocess Development and Partial Purification of Thermostable Fibrinolytic Enzyme From Bacillus Sp in the National Seminar on “Overcoming the Challenges: Role of Science & Technology” conducted during 22nd Odisha Bigyan 'O' Paribesh Congress, organized by Orissa Environmental Society Ravenshaw University, Cuttack on 20th -21st November, 2021.
- Sanatan Majhi1*, Swagatika Parida2, (Abstract Reference Number: NBC22/O/2208). A Immunohistochemistry based diagnostic approach to investigate the cross reactivity of canine (dog) mammary tumor Ki67 protein with commercial antibody used for human breast cancer detection, selected for oral presentation at National Bioengineering Conference, 2022, organized at NIT, Rourkela on 6th-7th January, 2022.

Technical Expertise:

- Practical knowledge on: Routine Biochemical Analysis of various biological samples, Enzymatic Studies, Studies on oxidative stress and antioxidant biology, Electrophoresis and blotting Techniques, Isolation of DNA, RNA, Immuno techniques and PCR, RT–PCR, HPLC.
- Microbiological techniques.

Professional Experience and Previous Positions held

a. Teaching and Research:

- Utkal University February, 2015 – present Designation: Assistant Professor & In-charge of Microbiology, Immunology Lab
- Designation: UGC-RGNF-Junior Research Fellow/Senior Research Fellow
- Designation: Research Scholar Topics: Molecular Characterization of Avian Influenza Viruses

b. Workshops/ Training Programmes Attended

- Orientation Workshop on “Volunteers in Veterinary/Agriculture Assistance (VIVA)” under COI-HPI Livelihood programme through small livestock, organized by COI-HPI, USA, at Bhubaneswar on 6th May, 2005.
- Training course on “Livestock Diseases & its Control under ASCAD” at Veterinary Officers Training Institute (VOTI) during 4th-8th February, 2008.
- Training/Workshop conducted by “Agropedia (NAIP Project)” at ICAR-IVRI, Izatnagar, Bareilly on 18th September, 2013.
- Training programme for 1 day on ICT, organized by Department of Computer Science, Utkal University during 2015.
- Faculty Development Training Programme on “Teaching Skill Development” for one week Short Term Course, conducted by UGC-HRDC, Academic Staff College, Utkal University during 20th – 25th March, 2015.
- Workshop on “Microtomy/ Ultra-microtomy, Staining and Imaging Techniques” Organized by Institute of Life Sciences, Nalco Square, Bhubaneswar, during 12th -13th April, 2018.
- Faculty orientation programme conducted by UGC-HRDC, Utkal University during 3rd – 30th August, 2018.
- Workshop on “Advances in Biotechniques” conducted by P.G. Department of Biotechnology, Utkal University, on 8th, December, 2018.
- Refreshers course conducted by UGC-HRDC, Utkal University in the subject “Biotechnology and Bio-sciences” during 25th January - 7th February 2020.
- Training in “Management of Respiratory Failure in COVID-19” organized Academy for Clinical Training on 30th April, 2020
- Attended “Science Leadership Workshop” conducted by the Central University of Punjab Bhatinda, on 22nd -28th June, 2020.
- Participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary Faculty Development Programme (FDP) on “Strategies in Modern Pedagogies” from 16/02/2021 to 20/02/2021 at National Institute of Technology (NIT), Sikkim.
- Participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary Faculty Development Programme (FDP) on "Research Trends in Separation & Purification Techniques" from 13/09/2021 to 17/09/2021 at National Institute of Technology (NIT), Raipur.
- National Workshop on “Research & Development” organized by Parul Institute of Design (PID) & Parul Institute of Fine Arts (PIFA), Parul University, Vadodara, Gujarat & Centre for Research & Training (CRT), National Foundation for Entrepreneurship Development (NFED), Coimbatore, Tamil Nadu from 21st -23rd October, 2021
- Participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary Faculty Development Programme (FDP) on "Development and applications of Sensors in Modern life" from 25/10/2021 to 29/10/2021 at National Institute of Technology (NIT), Arunachal Pradesh.
- Participated & completed successfully AICTE Training and Learning (ATAL) Academy Online Elementary Faculty Development Programme (FDP) on "Lab on chip and affordable diagnostics (under „Lab on chip“ thrust)" from 01/11/2021 to 05/11/2021 at Indian Institute of Technology (IIT), Kharagpur, West Bengal.
- Participated and completed successfully AICTE-ISTE approved Orientation/Refreshers programme on “Role of Biotechnology in Mitigation of Pollution and Restoration of

Environment” held during 11.1.2022 -17.1.2022, organized by the School of Engineering and Technology, GIET University, Gunupur, Odisha.

- Participated & completed successfully the Short term Training Programme on “Modeling and Optimization Techniques in Engineering” organized by IEC College of Technology, Bhopal, from 27th-29th January, 2022.
- Participated in the High-end workshop on “Next Generation Medical Devices: focusing on therapeutics and diagnostics - Series 1”, held at the Department of Biotechnology and Medical Engineering, National Institute of Technology, Rourkela under the Accelerate Vigyan Scheme, sponsored by SERB, from 7th-11th February 2022.
- Two Day State Level Online Workshop on the topic “The Use of ICT enabled tools for Teaching, Learning and Evaluation in Higher Education Institutions” Sponsored by National Assessment and Accreditation Council (NAAC) and Organized by Internal Quality Assurance Cell (IQAC), Durgapur Government College on 7th-8th May, 2022.
- On-line Training program/ IP Awareness under National Intellectual Property Awareness Mission, conducted by Intellectual Property Office, Govt. of India on 25th May, 2022,

Awards/ Honours/ Fellowships Received:

- Senior Research Fellow Examination, conducted by ICAR, Govt. of India in 2011.
- National Eligibility Test conducted by ICAR, Govt. of India in 2011.
- UGC-Rajiv Gandhi National Fellowship (UGC-RGNF), Govt. of India for pursuing Ph.D.

Reviewer/ Editorial Board:

- Editorial Reviewer & Board Member of the journal “Science Frontier” Science Publishing Group, USA.
- Editorial Reviewer and Member of the journal “Annals of Applied Sciences” an open access peer reviewed journal published by Mediterranean Journals.
- Editorial Review Board Member of Scientific and Technical Committee of “World Academy of Science, Engineering and Technology (WASET)”
- Editorial Board Member (Assistant) of “ Prani Bikas Dhara”
- Editorial Board Member in VIT Press-International Journal of Animal Science (VITP-IJAS); ID:VITP0301; <http://www.vitpress.com/journals/VITP-IJAS>.
- Editorial Board Member in VIT Press-International Journal of Biotechnology Research (VITP-IJBTR), ID: VITP0303 ; <http://www.vitpress.com/journals/VITP-IJBTR>
- Editorial Board Member in VIT Press-International Journal of Veterinary Science (VITP-IJVS), ID: VITP0300 ; <http://www.vitpress.com/journals/VITP-IJVS>
- Editorial Board Member in VIT Press-International Journal of Microbiology Research (VITP-IJMBR), ID: VITP0302; <http://www.vitpress.com/journals/VITP-IJMBR>
- Editorial Board Member of the journal “World Journal of Experimental Medicine (WJEM)” (ID: 05698836) published by Baishideng Publishing Group, USA.
- Associate Member in the “International Society for Development and Sustainability (ISDS)”, registered with Japanese Government as a private organization dedicated to research, development, consultation, training, and publication in all areas related to sustainable development.
- Topic Coordinator in the Journal “ Frontiers in Medical Technology”
- Associate Editor of the Journal “Annals of Physiotherapy & Occupational Therapy (APhOT)” MedWin Publishers, ISSN: 2640-2734, IF: 1.4259

Professional Memberships:

- Professional Member of Odisha Veterinary Association.
- Professional Member of Utkal University Teachers Association (UUTA)
- Professional Member of Indian Society for Veterinary Immunology and Biotechnology (ISVIB)
- Professional Member of International Paget's Association (IPA)
- Member of Indian Science Congress (InSC)
- Professional Member of Association of Pharmaceutical Research (APR)
- Professional Member of BioLegues Worldwide
- Professional Member of Microbiology Society, London,



Name: Mr. Sourav Ghosh

Designation: Guest Faculty

E-mail ID: souravzoology.ku@gmail.com

Areas of Research Interest:

- Molecular characterization.
- Epigenetics
- Immuneresponse
- Cloning and Recombination

Courses Taught:

Immunology, Cell & Molecular Biology, Biomolecules, Biotechniques, Recombinant DNA Technology and Instrumentation.

Educational Qualification

Degree	Subject	Institution/Board	Year
PhD	Biotechnology	ILS (Institute of Life Sciences)	Continued
M. Sc.	Zoology	University of Kalyani	2015
B.Sc.	Zoology	RKMVC College, WBSU	2013

Research Publications:

Journal Articles:

- Chandana, M.*, Anand, A.*, **Ghosh, S.***, Das, R., Beura, S., Jena, S., Suryawanshi, A. R., Padmanaban, G., & Nagaraj, V. A. (2022). Malaria parasite heme biosynthesis promotes and griseofulvin protects against cerebral malaria in mice. *Nature communications*, 13(1), 4028. <https://doi.org/10.1038/s41467-022-31431-z>. (* Contributed Equally)

- Anand, A., Chandana, M.*, **Ghosh, S.***, Das, R.*, Singh, N.*, Vaishalli, P. M., Gantasala, N. P., Padmanaban, G., & Nagaraj, V. A. (2023). Significance of Plasmodium berghei Amino Acid Transporter 1 in Food Vacuole Functionality and Its Association with Cerebral Pathogenesis. *Microbiology spectrum*, e0494322. <https://doi.org/10.1128/spectrum.04943-22>. (* Contributed Equally)

Technical Expertise:

- PCR, Cloning, Western blot, Southern blot Protein expression and purification, TLC, HPLC, Affinity, Size exclusion and Ion exchange chromatography, Proteomics, Metabolomics Mammalian cell culture, ELISA, Immunofluorescence assays Immunoprecipitation, Flow cytometry, Microscopy
- Mouse Immunization, Generation of transgenic parasites, Mice and Mosquito maintenance and dissection, Transmission stage studies in Mosquitoes, Mice and Hepatocyte cultures.

Awards/ Honours/ Fellowships Received:

- Qualified CSIR/UGC NET- LS (December 2015, June 2016)
- Qualified WBSET 2015
- Qualified GATE 2016
- Inspiring Science Award-2023 (Finalist)

Professional Experience and Previous Positions held

- Ph.D. in Biotechnology, Institute of Life Sciences Bhubaneswar, India (Since July 2016)
- Guest Faculty, Department of Biotechnology, Utkal University, Bhubaneswar (Since March 2022.

Patents:

- Griseofulvin as an adjunct drug for the treatment of cerebral and severe malaria. Indian Appl No. 202031050934, PCT Appl. No. PCT/IN2021/051071, Inventors: Viswanathan Arun Nagaraj, Govindarajan Padmanaban, Manjunatha Chandana Shetty, Aditya Anand, Sourav Ghosh
- A pharmaceutical composition to combat artemisinin resistance in malaria. (Provisional) Indian Appl No.202231018911, Inventors: Viswanathan Arun Nagaraj, Govindarajan Padmanaban, Sourav Ghosh, Rajib Kundu, Manjunatha Chandana, Aditya Anand.

**Dipti Mayee Dash, Ph.D.**

Guest Faculty

Department of Biotechnology

Utkal university, Bhubaneswar, Odisha

Phone: 9943818219/8248092771

Email: dash.diptimayee11@gmail.com

Areas of Research Interest:

- Microbiology
- Environmental biotechnology

Courses Taught:

Biotechniques, Recombinant DNA Technology and Instrumentation, Microbiology, Environmental Biotechnology and Biostatistics.

Educational Qualification

Degree	Subject	Institution/Board	Year
Ph.D.	Environmental Biotechnology	Vellore Institute of Technology, Vellore, Tamil Nadu	2015-2022
M.Sc	Biotechnology	Vellore Institute of Technology, Vellore, Tamil Nadu	2013-2015
B.Sc	Biotechnology	Trident Academy of Creative Technology, BBSR, Odisha	2010-2013

Research Publications:**Journal Articles:**

- Dash, D.M. and Osborne, W.J. A systematic review on the implementation of advanced and evolutionary biotechnological tools for efficient bioremediation of organophosphorus pesticides. Chemosphere. 2023 Feb; 313: p.137506
- Dash D.M. and Osborne W.J. Rapid biodegradation and biofilm-mediated bioremoval of organophosphorus pesticides using an indigenous Kosakonia oryzae strain-VITPSCQ3 in a Vertical-flow Packed Bed Biofilm Bioreactor. Ecotoxicology and Environmental Safety. 2020 Apr 1; 192:110290.

- Dash D.M. and Osborne J.W. Biodegradation of monocrotophos by a plant growth promoting *Bacillus aryabhattai* (VITNNDJ5) strain in artificially contaminated soil. *International Journal of Environmental Science and Technology*. 2019; 17(3):1475-90.
- Dash, D.M., Itusha, A., and Osborne, J. Bioremoval of Acephate by biofilm-forming *Enterobacter cloacae* - VITDAJ8. *Asia Pacific Journal of Molecular biology and Biotechnology*. 2020; 28(4):68-80.
- Dash, D.M., Itusha, A., Barik. M., Das. A. and Osborne J.W. Biosurfactant Production by Bacterial Isolates from Marine Sediments. *J. Pure Appl. Microbiol.* 2014, 8(6):5045-5050

Conference Proceedings:

- Dipti Mayee Dash and Osborne, J.W.; “Co-metabolic biodegradation of Organophosphorus pesticides using consortium of plant growth-promoting rhizobacteria”, National Seminar on Marine Natural Products as Pharmaceutical Agents (NSMNP) at Sathyabama Institute of Science and Technology, 2019
- Dipti Mayee Dash and Osborne, J.W.; “Biodegradation of monocrotophos by a plant growth promoting *Bacillus aryabhattai* (VITNNDJ5) strain”, International conference on recent advances in biomedical technology (RABT) at Thiruvalluvar University, Vellore, 2018
- Dipti Mayee Dash and Osborne, J.W.; “Application of a high throughput method for the biodegradation of Curacron and Quinalphos: A bioreactor based approach”, International Conference on Current Trends in Biotechnology (ICCB) at Vellore Institute of Technology, India, 2016

Professional Experience and Previous Positions held

- Mini project on “Biosurfactant Production by Bacterial Isolates from Marine Sediments” (July 2013 – Nov 2013) at VIT, Vellore
- Mini project on “Isolation of endophytes from fig, garlic and pepper and their role in the biosynthesis of bioactive compounds” (Jan 2014 – April 2014) at VIT, Vellore
- Mini project on “Preliminary studies on the bioremoval of monocrotophos and acephate using bacterial biofilm based bioreactor” (July 2014 – Nov 2014), at VIT, Vellore
- Masterthesis: Six months dissertation on “Application of a high throughput method for the degradation of curacron and Quinalphos using bacterial biofilm: A bioreactor based approach” (Dec 2014 - June 2015), at VIT, Vellore

- Ph.D. thesis: Doctoral research on “Phyto and Rhizoremediation strategies for the biodegradation of Organophosphorus pesticides: A metagenomic approach” (July 2015 – April 2022) at VIT, Vellore
- Formerly working as Teaching cum Research Associate at Vellore Institute of Technology (Jan 2015 - Jan 2020)

RESEARCH PROJECTS

Sl. No.	Project title	Funding agency	Amount (Rupees in lakhs)	Year of sanction (Duration)	PI/Co-PI/ Coordinator
1.	Academic, Infrastructure and Human Resource Development	DBT, Govt Of India	Rs. 316 lakh	5 Years	Coordinator: Prof. J Dandapat
2.	Modified assay Procedure for the estimation of Hydrogen peroxide in biological samples using Microplate Reader	Utkal University seed grant	Rs. 1.5 lakh	2017-2019 (2 year)	Dr. Jyotsnarani Pradhan
3.	Signature of DNA methylation machinery in the brain of propyl thiouracil (PTU)-induced hypothyroid rat: Effect of green tea catechins.	DST, Govt. of Odisha	Rs. 9.38 lakh	2017-2020 (3 years)	Prof. J Dandapat (PI) Dr.Jyotsnarani Pradhan (Co- PI)
4.	Molecular expression of thermostable glutaminase free l-asparaginase gene from a high yielding thermophilic isolate in e. coli: a prospective recombinant enzyme for leukaemia chemotherapy	DST, Govt. of Odisha	Rs. 9.64 lakh	2017-2020 (3 years)	Dr. Sabuj Sahoo Dr. Sanatan Majhi

5.	Neonatal hypothyroidism-induced epigenetic plasticity in the brain of adult rat: Implications of DNA methylation machinery and impact of curcumin."	N-PDF, DST, SERB, Govt. of India	Rs.25,08,890	2019-2022 (3 years)	Dr. Madhusmita Nayak (N-PDF under Prof. J. Dandapat)
6.	Efficacy of Homeopathic medicine (30C) on propyl thio uracil induced hypothyroid rats.	AYUSH, Govt. of India	Rs. 48.25 lakh	2019-2023 (4 years)	PI: Prof. J Dandapat Co-PI: Dr. Jyotsnarani Pradhan, UU Co-PI: Prof. G.B.N. Chainy., UU Co-PI: Dr. Debadatta Nayak, CCRH, New Delhi Co-PI: Dr. Anil Khurana, CCRH, New Delhi
7.	Isolating, characterization and screening of bioactive compounds with UV-Protective and antioxidant potentials from the red algae, <i>Gracilaria verrucosa</i> from chilka lake.	Odisha Sate Higher Education, Council, Government of Odisha	Rs. 4,92,000/-	2020-2022 (2 years)	Dr. Jyotsnarani Pradhan
8.	Development of Lateral flow based Immuno-diagnostics for Brucellosis.	Odisha Sate Higher Education, Council, Government of Odisha	Rs. 4,52, 000/-	2020-2022 (2 years)	Dr. Sanatan Majhi
9.	Evaluation of anti-inflammatory and immunomodulatory potential of red alga <i>Gracilaria verrucose</i>	WB-OHEPEE	Rs. 1.5 lakh	2022-2023 (1 year)	Dr. Jyotsnarani Pradhan
10.	Assessment of	AYUSH,	Rs. 2.6 lakh	2022-2023	Prof. J. Dandapat (PI)

	immunomodulatory impact of arsenic album 30c through cell culture bases study	Govt. of India		(1 year)	Dr.Jyotsnarani Pradhan (Co- PI)
11.	Signature of redox regulatory proteins, transcription factor and biological clock genes in hypothyroid rat: Impact of time restricted feeding (TRF) and curcumin.	DST, Govt. of Odisha	Rs. 10 lakh	2022-2025 (3 years)	Dr. Jyotsnarani Pradhan
12.	Development of a gold nanoparticle-based enhanced lateral flow assay (LFA) for rapidin-field detection of foot and mouth disease virus	DST, Govt. of Odisha	Rs. 29 lakh	2023-2026 (3 years)	Dr. Smruti Rekha Mallick (PI) Dr. Jitendra Kumar Biswal (Co-PI) Dr. Sanatan Majhi (Co-PI)

INFRASTRUCTURE AND LEARNING RESOURCE

Post graduate Department of Biotechnology, Utkal University, established in 2002, equipped with modern and appropriate infrastructure to meet the basic to advanced requirements for teaching and research in the field of biotechnology. P.G. Department of Biotechnology is equipped with smart classroom, laboratories with modern instruments with cutting edge technology. Research infrastructure of the department is designed to encompass all the diverse aspects of biotechnology with major emphasis on redox biology, molecular biology, cell culture facility, microbial technology and bioinformatics.



FACULTY ROOM

HEAD ROOM



STUDENT LABS

MOLECULAR BIOLOGY LAB CELL CULTURE LAB



MICRO BIOLOGY LAB

REDOX BIOLOGY LAB

**SEMINAR HALL CUM
CLASSROOM**

OFFICE ROOM



LIBRARY

ANIMAL HOUSE

WASH ROOM

STORE ROOM

RESEARCH FACILITIES

P.G. Department of Biotechnology has achieved excellence in the domain of biotechnology with smart facilities, modern instruments equipped with cutting edge technologies which meet the requirements or proficient teaching along with fundamental to translational research. Our laboratories are equipped with state-of-art equipment like Horizontal and vertical electrophoresis system, semidry and wet western blot transfer Unit, ELISA readers, pH meter, Magnetic stirrer, Chemi Doc, Gradient PCR, RT-PCR, HPLC, Fluorescence Microscope, Milli-Q water purification system, Sonicator, Fluorescence Spectrophotometer, UV-VIS Spectrophotometer, Light Microscope, Ice Flaking Machine, Water Bath, Microtomy, Cooling centrifuge, Laminar Air Flow, Shaking Incubator, Hot Air Oven etc.

EQUIPMENT/ FACILITIES SET UP IN THE DEPARTMENT

- Research Facilities (labs) : 06
- Molecular Biology Laboratory:02
- Redox biology and Epigenomics Laboratory: 01
- Microbial Technology Laboratory:01
- Cell Culture Facilities:01
- Animal House:01



UV VISIBLE SPECTROPHOTOMETER



UV VISIBLE SPECTROPHOTOMETER WITH MICRO VOLUME CAPACITY



FLUORESCENCE SPECTROPHOTOMETER



HIGH PERFORMANCE LIQUID CHROMATOGRAPHY



ELECTROPHORESIS UNIT



REAL TIME PCR



HIGH SPEED COOLING CENTRIFUGE



FLUORESCENCE MICROSCOPE WORK STATION



WATER PURIFICATION SYSTEM



GEL DOCUMENTATION SYSTEM



THERMAL CYCLER



BINOCULAR RESEARCH MICROSCOPE WITH IMAGE CAPTURE FACILITY



LAMINAR HOOD

EXTENSION ACTIVITIES

The students of P.G. Department of biotechnology are actively engaged in various out reach and extension activities. These activities and programs attended by students have contributed to good citizenship, service orientation and holistic development of the students.



Organisation of Eye Screening Programme



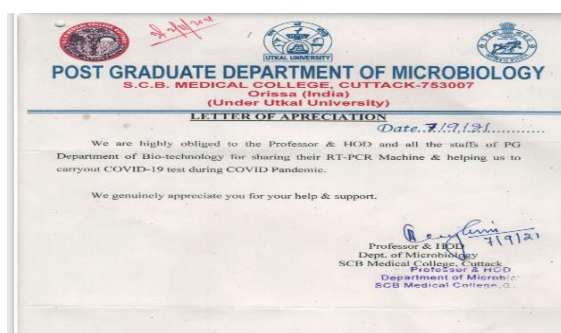
Plantation of saplings on Teachers' day and Van Mahotsav



Blood Donation Camp



Cleanliness drive under Swachha Bharat Abhiyaan



Providing RT-PCR machine to support COVID-19 testing during pandemic

**SEMINARS/CONFERENCES/SKILL DEVELOPMENT WORKSHOPS ORGANISED BY
DEPT. OF BIOTECHNOLOGY**

Sl. No.	Category	Event	From	To
1	UGC Sponsored Skill Development Workshop	Basic Methods in Proteomics	28.03.2017	29.03.2017
2	Event	World DNA day celebration on the Topic “ DNA-Past, Present and Future”	25.04.2017	25.04.2017
3	Memorial lecture	“Padma Shri Professor Madhu Sudan Kanungo Memorial Lecture” by Director, ILS, BBSR	18.05.2018	18.05.2018
4	Workshop	Advances in Biotechniques	08.12.2018	08.12.2018
5	National Seminar cum workshop	Proteomics in public health	15.03.2019	16.03.2019
6	Departmental Seminar	The advancement in gene manipulation technique: Role in Health and diseases	10.12.2021	10.12.2021
7	International Webinar	Redox Homeostasis: An Universal Process in Diverse Cellular Events	20.12.2021	20.12.2021

EXTRA MURAL LECTURES

Sl No.	Resource Persons	Topic	Date
01	Prof.Pramod C. Rath, School of Life Science , JNU, New Delhi	Stem Cells	07/12/2016
02	Prof. Utpal Bora Biomaterial and Tissue Engineering Laboratory, Department of Biotechnology, IIT Guwahti, Assam	Socio-ethical issues in genome editing and engineering	18/02/2017
03	Prof.GBN Chainy, Honorary visiting Professor	DNA: Past, Present and Future	25/04/2017
04	Prof.Debananda Pati, Paediatrics-Oncology, Baylor College of Medicine, Houston, TX, US	Role of Chromosomal Cohesion and Separation in Aneuploidy and Cancer: From Biology to Beside	01/08/2017
05	Dr.Ajay Parida , Director, Institute of LifeSciences, Bhubaneswar	Science of Societal Benefits	17/08/2017
06	Dr. Tapas Goswami Principal scientist, ICAR- Indian Veterinary Research Institute, Bareilly, UP.	Immunology: subject of strange biology standing on its toe, disrupts the foe.	27/01/2018
07	Dr. Surya Narayan Rath Asst.professor, Department of Bioinformatics, OUAT, Bhubaneswar	Molecular dynamic simulation: A tool to study Dynamics of Macromolecules.	31/01/2018
08	Dr. Tirumala Kumar Chowdary Reader -F, school of Biological sciences, NISER, Bhubaneswar.	Research talk	28/02/2018
09	Dr.TimirTripathi Department of Biochemistry, North -Eastern Hill University, Shillong	Dynamicthiol-based redox metabolism in the liver fluke Fasciolagigantica offer novel targets for drug development.	17/04/2018
10	Dr. Aditya Padhi Biosystems Dynamics Research, RIKEN	Exploring conceptual approaches to uncover loss of function mechanisms in Amyotrophic lateral sclerosis and familial lymphoma.	14/08/2018
11	Dr.Renjith Mathews School of biological sciences, NISER	Cell , their shapes and some ruminations on biology of 21 st century.	18/08/2018
12	Prof. B.C. Tripathy School of Life Sciences, JNU Delhi	Modulation of chlorophyll biosynthesis and degradation protects plants from high light stress and other abiotic stress.	9/11/2018
13	Dr.Ranjith Mathew Reader – F , School of Biological sciences, NISER Bhubaneswar,	Basics of confocal microscopy	8/12/2018

14	Dr. Satish Devdas , Scientist D , Institute of Life sciences Bhubaneswar	Basics of flow cytometry and research applications	8/12/2018
15	Dr.Anshuman Dixit Scientists D, Institute of Life sciences Bhubaneswar	Protein structure Modelling	8/12/2018
16	Dr. Santosh Chauhan Senior Scientist, Institute of Life sciences, Bhubaneswar.	Autophagy inflammation and crosstalk	26/02/2019
17	Dr.Amulya Panda Director, NII, New Delhi	Vaccine development past present and future	1/07/2019
18	Dr.NishaPatro Jiwaji University, School of Studies in Neuroscience	Protein Malnutrition and Brain Development.	20/09/2019
19	Dr.SangramKeshariSamal Scientist- D , ICMR- Regional Medical Research Centre	Doing Science with Passion.	28/08/2020
20	Dr.BikashPattnaik Department of Pediatrics and University of Wisconsin Madison, USA	The Advancement in Gene Manipulation techniques ; Role in Health and disease.	10/12/2021
21	VarshaMahapatra Research Professor, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore	Interactive Session With Students	08/01/2022
22	Dr.Pranita P. Sarangi Associate Professor, Department of Bioscience and Biotechnology, IIT - Roorkee, Uttarakhand	Dynamics of Innate Immune Cell Migration and Function in Sepsis	18/03/2022
23	Dr. Manisha Acharya CEO, Centre of Innovation and Incubation	Bio Entrepreneurship Sectors and Funding Opportunities	23/03/2022
24	Dr.IndrajitSahu Senior Postdoctoral Researcher, Department of Cancer Biology, Dana-Farber Cancer Institute Harvard Medical School, Boston, US	Protein Degradation- Destruction of the Sake of Construction	25/04/2022
25	Dr.Soumen Chakraborty Scientist-F, Institute of Life Science, Bhubaneswar	CRISPR-CAS9	14/05/2022

26	Dr.Sujay Singh Director, Imgenex India Pvt. Ltd., Bhubaneswar	Evolution of Biological Science	17/05/2022
27	Dr.Rupesh Dash Scientist-E, Institute of Life Science, Bhubaneswar	Research Talk	19/05/2022
28	Dr.Amaresh C. Panda Scientist-D, Institute of Life Science, Bhubaneswar	Role of Circular RNAs (CircRNAs) in Muscle Regeneration	28/05/2022
29	Dr. N. Dey Scientist-F, Institute of Life Science, Bhubaneswar	Orientation Programme	22/09/2022
30	Dr.UmakantaSubudhi Principal Scientist, CSIR-IMMT, Bhubaneswar	Orientation Programme	23/09/2022
31	Prof. C. C. Rath Professor, RD Womens University	Orientation Programme	24/09/2022
32	Dr.Soumen Chakraborty Scientist-F, Institute of Life Science, Bhubaneswar	Orientation Programme	24/09/2022
33	Dr.DilipVasudevan Scientist-E, Institute of Life Science, Bhubaneswar	Orientation Programme	26/09/2022
34	Dr. B. B. Mishra President OBA	Orientation Programme	27/09/2022
35	Prof.AshisMohanty Secretary, OBA	Orientation Programme	27/09/2022
36	Dr.BhaskarSaha Scientist-G, NCCS, Pune	Orientation Programme	27/09/2022
37	Prof. S. P. Adhikary Former V. C. FM University	Orientation Programme	27/09/2022

38	Dr.Amulya K. Panda Former Director, NII, New Delhi Associate Director - R&D (Biologicals), Panacea Biotech, New Delhi	Orientation Programme	28/09/2022
39	Ms. Smita Das Founder and Managing Director of Shresth Industries.	Orientation Programme	17/10/2022

ACHIEVEMENTS OF STUDENTS AND RESEARCH SCHOLARS

DEPT OF BIOTECHNOLOGY, UTKAL UNIVERSITY

ACHIEVEMENTS OF M.Sc. STUDENTS IN NATIONAL LEVEL ENTRANCE EXAMINATIONS

BATCH 2021-23 (CURRENT BATCH)			
Sl. No	Name of the Research Scholar	Nature of Achievement	Year
1	Rudra Pratap Singh	GATE	2023
2	Tamoghna Chakraborty	GATE Selected for Ph.D. in IIT Guwahati	2023
3	Debalaya Mukherjee	GATE	2023
4	Smruti Swarupa Mishra	GATE	2023
5	Soumya Ranjan	GATE Selected for Ph.D. in University of Minnesota ,USA	2023
BATCH 2020-22			
6	Monalisha Padhiary	GATE, DBT (CATEGORY II), DST-INSPIRE	2023
7	Saumyashree Das	GATE	2023
8	Abinash Jena	GATE-XL (AIR-8) GATE-BT (AIR-79)	2023
9	Shivam Kesarwani	GATE, TIFR, DBT JRF	2023
10	Santosh Kumar Sethi	GATE, CSIR NET	2022
11	Jagatjita Mallick	GATE, CSIR NET	2022
12	Bhabani Mishra	GATE	2022
13	Anshuman Panda	GATE	2022

14	S. K. Rameej Raja	GATE	2022
15	Abhisek Behera	GATE	2022
16	D. Nishant Kumar	GATE	2022
17	Pooja S. Gundure	GATE	2022
18	Jashaswi Priyadarshini Jena	DBT JRF	2023
BATCH (2019-2021)			
19	Daamini Pattnaik	GATE	2021
20	Palak Khandelwal	GATE	2021
21	Pritiusha Pradhan	GATE/ TIFR	2021
22	Raj Kumar Samata	GATE/ DBT-JRF	2021
BATCH (2018-2020)			
23	Rima Samanta	GATE	2020
24	Namrata Kanungo	GATE	
25	Niladri Haldar	NET-JRF, DBT-JRF	2020
26	Sayani Das	DBT-JRF, NET-LS, GATE	2020
27	Bristy Ganguli	GATE/ TIFR/ MPhil	2020
28	Nishi PragyanNaik	GATE, NET-JRF	2021
29	Vinayak Nayak	GATE/ ICAR-JRF	2020
30	Rajashree Nayak	GATE	2021
31	Madhumati Majhi	ICAR-JRF	2020
32	Sugyani Priyadarshini	GATE	2020
BATCH (2017-2019)			
33	SaheliSaha	NET-LS, GATE	2019
34	Susmita Ghosh	NET-LS, GATE	2019
35	Swagatika Behera	GATE	2019
36	Ananya Ghosh	GATE	2019
37	Subhasis Mahari	CSIR- JRF	2018
38	Deepak Jha	CSIR-JRF GATE	2019
39	Madhurima Mandal	NET-LS, GATE	2019
40	Supriya Samal	CSIR-JRF, GATE	2019
41	Preety Barla	NET-JRF	2019
BATCH- (2016-2018)			
42	Monalisha Ojha	CSIR-JRF, GATE	2018
43	Priti Ranjan Sahoo	CSIR-JRF, GATE	2018
44	Ankita Pal	GATE	2018
45	Soumya Ranjan Dash	GATE	2019
46	Bibhu Ranjan Khatua	CSIR-JRF	2018

47	Swagatika Parida	GATE	2021
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**AWARDS OF RESEARCH SCHOLAR AND STUDENTS IN CONFERENCES AND
EXTRA-CURRICULAR ACTIVITIES**

Sl. No	Name of the Research Scholar	Programme studied	Nature of Achievement	Year
1	Poonam Das	Ph.D.	Got 3rd Prize at Research Scholars' Conclave organized by Utkal University, Odisha.	2021
			Got 3rd Prize at International conference on TIARST organized by Dept. of Zoology, Utkal University, Odisha.	2023
2	Dr. Suvasmita Rath	Post-Doctorate fellow	Got the best presentation award in oral presentation in “22nd Orissa Bigyan ‘O’ Paribesh Congress (OBPC) organized on November 20-21, 2021, the focal theme being ‘Overcoming the Challenges: Role of Science & Technology’” organized by Ravenshaw University, Cuttack	2021
3	Rout George Kerry	Ph.D.	Got 2 nd Prize in Poster presentation at International Conference on Biotechnology and Bioinformatics and Challenges, Maharaja Sriram Chandra Bhanja Deo University, Odisha	2022

4	Atala Bihari Jena	PhD	Selected for Post Doctorate research at Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA, 02115, USA	2022
5	Dr. Suvasmita Rath	Post-Doctorate fellow	Got 1 st prize in oral presentation in a national conference on "Cancer Biology and Therapeutics (CBT-2022)" organized by Department of Zoology Patharkhandi College and Pandit Deendayal Upadhyaya Adarsh Mahavidyalaya during 30-31 st May, 2022	2022
6	Dr. Suvasmita Rath	Post-Doctorate fellow	Received diamond prize for the best oral presentation in international conference on "Frontiers in Materials for Technological applications (FIMTA-2022)" organized by IMMT, Bhubaneswar, during August 03-03, 2022	2022
7	Poonam Das	PhD	Got 3rd Prize in Poster presentation at International conference on Technological Innovation in Animal Science Research and Social Transformation	2023

			organized by Department of Zoology, Utkal University and Zoological Society of Orissa, Bhubaneswar from 24 th -26 th February, 2023	
8	Dr. Suvasmita Rath	Post-Doctorate fellow	Received best oral presentation award at international conference on “Technological Innovations in Animal Science Research and Social Transformation” held at Department of Zoology, Utkal University, Bhubaneswar, Odisha from 24 th -26 th February, 2023	2023
9	Deepakshi Sahu	M.Sc.	Second Competition in Rangoli Competition at Utkal Glory Fest 2023, Utkal University	2023

AWARDS OF TEACHERS
IN SEMINARS/ CONFERENCES/RESEARCH SCHOLAR CONCLAVE

Sl. No	Name of the Teacher	Position	Nature of Achievement	Year
1	Dr. Jyotsnarani Pradhan	Assistant Professor Stage-II	1st prize in Biological Science category at Odisha Research conclave-2021 jointly organized by Odisha higher Education council and Utkal University	2021
2	Prof. J. Dandapat	Professor	Invited Speaker- International Symposium on Genomics in Aquaculture, “Beyond genomics: Epigenomic in aquaculture and the way forward”, organized by the ICAR- CIFA	2020
3	Prof. J. Dandapat	Professor	Invited Speaker- National Conference on Biotechnology: Prospective and Challenges, “Remodeling Redox Regulatory Network In Silk Worm : Insights From Proteomics And Systems Biology” Organized by Department of Biotechnology, Savitribai Phule University, Pune	2020
4	Prof. J. Dandapat	Professor	Invited Speaker- Annual Meeting of the Society for Free Radical Research. India & Conference on “Role and Management of Oxidative stress in Human Disease” (SFRR-INDIA-2020), “Hepatic epigenetic changes in the adult male rats under altered thyroid state: Impact of natural antioxidant curcumin” Organized by Bio-Science group, BARC, Mumbai	2020

RESEARCH PUBLICATION

1. Characterization of DNA condensation by conformationally restricted dipeptides and gene delivery. Journal of Biomedical Nanotechnology, 2016. Anjali Khatri, Aseem Mishra, Virander Singh Chauhan. (Accepted on Aug 18, 2016). <https://doi.org/10.1166/jbn.2017.2325>
2. Curcumin and Ellagic acid synergistically induce ROS generation, DNA damage, p53 accumulation and apoptosis in HeLa cervical carcinoma cells. Kumar, D., Basu, S., Parija, L., Rout, D., Manna, S., Dandapat, J. and Debata, P.R., 2016. *Biomedicine & Pharmacotherapy*, 81, pp.31-37. <https://doi.org/10.1016/j.biopha.2016.03.037>
3. Age related changes in rat kidney antioxidant enzymes and oxidative stress parameters with special reference to catalase promoter methylation pattern Jena S, Bunker SK, Dandapat J, Chainy G.B.N. (2016) Topics in Biomedical Gerontology. Springer, Singapore. Edited by P.C. Rath, R. Sharma and S. Prasad. https://doi.org/10.1007/978-981-10-2155-8_9
4. An Overview of Seasonal Changes in Oxidative Stress and Antioxidant Defence Parameters in Some Invertebrate and Vertebrate Species. Chainy, G.B.N., Paital, B. and Dandapat, J. 2016. *Scientifica*, 2016. <https://doi.org/10.1155/2016/6126570>
5. Homeopathic Medicine *Rauwolfia serpentina* Ameliorate Blood Pressure and Oxidative Stress Parameters of Kidney by Modulating Expression of Antioxidant Enzymes in Deoxycorticosterone Acetate (DOCA)-Salt-Induced Hypertensive Rat Model. Kumar, S., Dandapat, J., Chainy, G.B.N., Hati, A.K. and Nanda, L., 2016. *J Drug Res Dev*, 2(1), pp.2470-1009. <http://dx.doi.org/10.16966/2470-1009.111>
6. Synthesis, spectral characterization, *in silico* and *in vitro* antimicrobial investigations of some Schiff base metal complexes derived from azosalicylaldehyde analogues in Indian J of Chemistry, by SAHOO1*, S. SAHOO2 and P. SUDHIR KUMAR1, <http://nopr.niscair.res.in/handle/123456789/35629>
7. Biological evaluation of novel α -heteroaryl/arylazo 2-naphthol analogs and the transitional metal complexes derived from 4-((2-hydroxynaphthalen-1-yl) diazenyl)-1, 5-dimethyl-2-phenyl-1H-pyrazol-3(2H)-one by sahuo j.*, sahuo s. and paidesetty s. k., july 2016 Indian Drugs 53 (07), 15-24. <http://dx.doi.org/10.53879/id.53.07.10645>
8. Evaluation of *Toddalia asiatica* (L.) Lam leaf extracts for antidiabetic activity by S K Mekap, S Sahoo, KB Satapathy, SK Mishra^{1*}, Pharmaceutical and Biological Evaluations, February 2016; vol. 3 (Issue 1): 115-125. [https://www.semanticscholar.org/paper/Evaluation-of-Toddalia-asiatica-\(L.\)-Lam.-leaf-for-Mekap-Sahoo/31cd0894152d5fd5c21553dc4a4f7b6a1c99db56](https://www.semanticscholar.org/paper/Evaluation-of-Toddalia-asiatica-(L.)-Lam.-leaf-for-Mekap-Sahoo/31cd0894152d5fd5c21553dc4a4f7b6a1c99db56)
9. "Antioxidant and hepatoprotective properties of macro- alga *Chaetomorpha linum* against experimentally induced oxidative stress." P. Rautray, J. Pradhan and L. Samanta

(2016) Int. J of Recent Sci. Res. 7 (7), pp. 12688-12691, <http://recentscientific.com/sites/default/files/5892.pdf>

10. Neonatal Exposure to 6-n-Propyl-Thiouracil, an Anti-Thyroid Drug, Alters Expression of Hepatic DNA Methyl transferases, Methyl CpG-Binding Proteins, Gadd45a, p53, and PCNA in Adult Male Rats. Bunker, S.K., Dandapat, J., Chainy, G.B., Sahoo, S.K. and Nayak, P.K. *European thyroid journal*. 2017; 6: pp.281-291. <https://doi.org/10.1159/000479681>
11. Features and outcomes of drugs for combination therapy as multi-targets strategy to combat Alzheimer's disease. Sahoo, A.K., Dandapat, J., Dash, U.C. and Kanhar, S. *Journal of Ethnopharmacology*. 2017; 215: pp.42-73. <https://doi.org/10.1016/j.jep.2017.12.015>
12. Evaluation of phytochemical constituents and antimicrobial properties of *Mangifera indica* L. leaves against urinary tract infection-causing pathogens, Gyanranjan Mahalik, Sabuj Sahoo, Kunja Bihari Satapathy *Asian Journal of Pharmaceutical and Clinical Research*, 10(9) 2017, 169-173. <http://dx.doi.org/10.22159/ajpcr.2017.v10i9.19034>
13. Screening, Partial Purification and Stability Studies of Cyclodextrin glycosyl Transferases from *Bacillus amyloliquefaciens* Strain L4-6,(2017) Devika Das, Sheela Kumari Sahoo, Luna Samanta and Sabuj Sahoo, *JAM* 3(5-6), pp 252 – 262. <https://www.researchgate.net/publication/335523909>
14. Differential expression of apoptotic proteins in seminiferous tubule cells of adult rats by neonatal exposure to 6-n-propyl-2-thiouracil (PTU), a thyroid disrupting chemical. Sahoo, S.K., Dandapat, J., and Chainy, G.B.N. *Indian Journal of Experimental Biology*. 2017; 55: pp.634-641. <http://nopr.niscair.res.in/bitstream/123456789/42687/1/IJEB%2055%289%29%20634-641.pdf>
15. Pro-inflammatory cytokine Interleukin-1 β (IL-1 β) controls *Leishmania* infection. Tejaswini Patil, Vasundhara More, Deepti Rane, Arkajyoti Mukherjee, Rahul Suresh, Ashok Patidar, Neelam Bodhale, David Mosser, Jagneshwar Dandapat, Arup Sarkar. *Cytokine*. 2018. <https://doi.org/10.1016/j.cyto.2018.06.033>
16. Neutrophils: Interplay between host defense, cellular metabolism and intracellular infection. Deepti Rane, Tejaswini Patil, Vasundhara More, Sushree Sangita Patra, Neelam Bodhale, Jagneswar Dandapat, Arup Sarkar. *Cytokine*. 2018; <http://doi.org/10.1016/j.cyto.2018.07.009>.
17. Type-1 interferons prolong the lifespan of neutrophils by interfering with members of the apoptotic cascade. Eresso Agaa, Arkajyoti Mukherjee, Deepti Rane, Vasundhara More, Tejaswini Patil, Ger van Zandbergend, Werner Solbach, Jagneswar Dandapat, Heidi Tackenberg, Mareike Ohms, Arup Sarkar, Tamas Laskay. *Cytokine*. 2018; <http://doi.org/10.1016/j.cyto.2018.06.027>
18. Low H₂O₂ and enhanced oxidative resistance in the diapause-destined pupa of silkworm, *Antheraea mylitta* (Lepidoptera: Saturniidae) suggest their possible involvement in dormancy and lifespan extension. Sahoo, A., Dutta, A., Dandapat, J., and Samanta, L. *BMC Zoology*. 2018; <http://10.1186/s40850-018-0027-4>.
19. Host plant-derived allelochemicals and metal components are associated with oxidative predominance and antioxidant plasticity in the larval tissues of silkworm, *Antheraea*

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COLLABORATIVE ACTIVITIES FOR RESEARCH

Along with potentiating the great infrastructure and brilliant mind, P.G. Dept of Biotechnology also believes on achieving excellence through collaboration and exchanging ideas. Over the years, this department has collaborated with some of the national and international institutions and provided some impactful outcomes.

National institutes with whom our department has collaborated:



International institutes with whom our department has collaborated:



ALUMNI MEMBERS OF P.G. DEPARTMENT OF BIOTECHNOLOGY, UTKAL UNIVERSITY

Sl. No	Name	Exams Qualified	Ph.D.	Post-DOC	Currently placed
Batch 2002-2004					
1	Dr.Aseem Mishra	NET-JRF	ICGEB, New Delhi		CEO, Prantae Solutions Private Limited, Bhubaneswar, Odisha
2	Dr. UmakantSubudhi	NET-JRF	Utkal University, Bhubaneswar		Scientist B, IMMT, Bhubaneswar
3	Dr. SaktikantaRath	NET-JRF	North Odisha University		Associate Professor, Dept of Life Science, Ramadevi University, Bhubaneswar
4	Dr. Priyankar Sen	NET-LS	<u>Aligarh Muslim University</u>	NII, New Delhi	Assistant Prof., VIT University, Vellore
5	Dr. Madhumita Panda	NET-JRF	ILS, BBSR		
6	Dr. Avisek Kumar		VinobaBhave University, Bihar		Area sales manager, Thermo Fisher Scientific, Bangalore
7	Gitanjali Rath				
8	Binaya Kumar Thakur				Senior Manager, Clinical Development at Biocon Biologics, Bangalore, Karnataka
9	Dhananjay Kumar				
Batch 2003-2005					
10	Dr. Srikanta Jena	DBT/NET/GATE	Utkal University, Bhubaneswar		Assistant Professor, P.G. Dept of Zoology, Ravenshaw University, Cuttack
11	Dr. Jyotsnarani Pradhan	GATE	Utkal University, Bhubaneswar	ILS, BBSR	Assistant Professor, P.G. Dept of Biotechnology, Utkal University, BBSR
12	Dr. JibanJyoti Panda	NET-JRF/DBT/GATE/ICMR	ICGEB, New Delhi		Scientist C, Institute of Nano Science and Technology, Punjab
13	Dr. Pranati Sar	NET/GATE	ILS, Bhubaneswar		DST- SERB Young Scientist at Nirma University
14	Swatilekha Das	NET-LS			Orissa administrative service
15	Dr. MeeraKumari	NET-LS	Kansas University, USA		

16	Sulochana Bisoi				
17	Kumari Archana				
18	Alok Kumar Sethi	DBT-JRF			
19	Abhishek	NET/DBT/ICMR /ARS/GATE			
BATCH: 2004-2006					
20	Dr. Sawan Kumar	NET/GATE	IIT Madras, Chennai		
21	Dr. Jay Prakash		BHU, Varanasi	JamiaMili aIslamia University	
22	Vijay Mandal	GATE			
23	Dr. Deepak Kumar	NET/GATE	ILS, Bhubaneswar	University of California School of Medicine and U.C.S.D., U.S.A	
24	Dr. Jawed Alam	NET, GATE	NISED, Kolkata	ILS, BBSR	
25	Ronita P. Kujur				
26	Anju Kashyap				
27	A.T. Vivek	GATE			
BATCH: 2005-2007					
28	Dr. Anjan Pradhan	NET/GATE	ILS, Bhubaneswar	Post Doc at Virginia Commonw ealth University, USA	
29	Dr. Rajesh kumar Kar	GATE/NET	IIT Bombay	University of Wisconsin -Madison, USA	

30	Dr. Sneha Singh	NET/GATE	ILS, Bhubaneswar	CCMB, Hyderabad	
31	Dr. Binapani Mahaling	NET/GATE	IIT Kanpur	Post- Doctoral Research Scientist at Johns Hopkins University	
32	Dr. Sangeeta Kumari	NET/GATE	NCCS, Pune		
33	Dr. Namita Khanna	NET/GATE	IIT Kharagpur	Microbial Chemistry, Departmen t of Chemistry, Uppsala University, Sweden	
34	Dr. DeeptiDeepika	NET/GATE	IIT Bombay		
BATCH: 2006-2008					
35	Dr. Sunil Behera	NET-JRF	IMMT, Bhubaneswar	University of Johannesb urg, South Africa	Assistant Professor, Department of Bioscience and Bioinformatics, Khallikote University, Berhampur
36	Dr. ArpitaSaha	NET_JRF	JNU, New Delhi	The Hebrew University of Jerusalem	Post-Doctoral Researcher at The Hebrew University of Jerusalem
37	Dr. Shashikala Verma,	NET-JRF	JNU, New Delhi	CCMB, Hyderabad	Postdoctoral Visiting Fellow at National Institutes of Health (NIH)
38	Dr. Saswat K Bal,	NET-JRF	JNU, New Delhi	Postdoctor al Research Fellow at Cleveland Clinic	Postdoctoral Research Fellow at Cleveland Clinic, Cleveland, Ohio
39	Dr. Saurabh Mishra	NET-JRF	CDFD, Hyderabad	National Institute of Health	Postdoctoral Visiting Fellow at National Institutes of Health (NIH)

40	Dr. Jayant Solanki	NET-JRF	Bangalore University		
41	Rakesh Kumar				Lecturer, SRKG College, Sitamarhi, Bihar
42	Dr. B. Chetna	NET-JRF	IISc, Bangalore		Post-Doctoral Researcher, University of Pittsburgh, Pennsylvania
43	Dr. Suresh Bunkar	CSIR-JRF	Utkal University, Bhubaneswar		RUSA-PDF, University of Rajasthan
44	Sapna Prasad		Lucknow University, Lucknow		
45	Dr. Sudhir Singh	NET-JRF	BHU, Varanasi	IISc, Bangalore	IISc, Bangalore
46	Dr. Ghanasyam Yadav	NET-JRF	IMTECH, Chandigarh		Research fellow at UPMC Hillman Cancer Centre, Pittsburgh, USA
BATCH: 2007-2009					
47	Dr. Ashutosh Kumar	NET-JRF	NISER, Bhubaneswar	Post-Doctoral Research Scientist at University of Iowa Hospitals and Clinics, Iowa City, USA	Post-Doctoral Research Scientist at University of Iowa Hospitals and Clinics, Iowa City, USA
48	Dr. Saurabh Pandey	NET-JRF	CCMB, Hyderabad		Post-Doctoral Researcher, University of Freiburg, Germany
49	Dr. Sandeep Saini		Utkal University, Bhubaneswar		Assistant Professor, MITS School of Biotechnology, Bhubaneswar
50	Dr. Vinod Ch		Central University, Hyderabad		Assistant Professor, KIIT Deemed to be University, Bhubaneswar

51	Dr. Manik Vij		ICGEB, New Delhi		Post-Doctoral Researcher at Karolinska Institute Stockholm, Sweden
52	Bantu Raghu Ram		Central University, Hyderabad		Patent Officer, Indian Patent Office/Trade Marks Registry/Designs Office, Kolkata
BATCH: 2008-2010					
53	Dr. Nitin Keshari	NET/GATE	Shanti Niketan University	ICGEB, Hyderabad	Research Scientist at Qingdao Institute of Bioenergy and Bioprocess Technology, Shandong Sheng, China
54	Dr. Rashmi Kumari	NET/GATE	ICGEB, New Delhi	Purdue University, West Lafayette, Indiana, US	Purdue University, West Lafayette, Indiana, US
55	Dr. Priyank Jain	NET/JNU/GATE	JNU, New Delhi		Research Associate at Qingdao Institute of Bioenergy and Bioprocess Technology, Shandong Sheng, China
56	Dr. Shagufta Khan	NET/GATE	Jamia Millia Islamia University, New Delhi		
57	Hitesh Singh Chaouhan	NET/GATE	IITR, Lucknow		
58	Dr. Sonia Sen	NET/GATE	JNU, New Delhi		
59	Dr. Anand Maheshwari	NET/ICMR/GATE	IMTECH, Chandigarh		Scientist at Aurobindo Biologics, Hyderabad
60	Dr. Prabala Kumari	NET/DBT/GATE	ILS, BBSR		DST-INSPIRE Faculty at CSIR-National Chemical Laboratory, Pune
61	Santosh K Saha	NET/GATE	Magadh University, Gaya		Owner of a private coaching centre, Bihar
BATCH: 2009-2011					

62	Dr. Poonam Singh	NET/GATE	NII, New Delhi	NII, New Delhi	
63	SumitkumarGautam	NET/JNU/GATE	JNU, New Delhi		
64	Dr. Punch Muiwo	JNU	JNU, New Delhi	Department of Botany, NEHU, Shillong	
65	Tanmoy Sarkar	NET/GATE	ICGEB, New Delhi		
66	ChinmayAnand	NET/IISc./GATE	IISc, Bangalore		
67	Dr. Govind Raju		Clinical and Molecular Cancer Medicine, London, United Kingdom		
68	Dr. BhanuRamya	GATE	IICT, Hyderabad		
BATCH: 2010-2012					
69	Dr. Varun Saha	NET/DBT/GATE	CDFD, Hyderabad		Post-Doctoral Researcher at Goethe-University Frankfurt, Germany
70	Dr. DhakaramPangeni	NET/DBT/GATE	JNU, New Delhi		Postdoctoral Research Fellow at Florida State University
71	Dr. Saurabh Chadhury	NET/GATE	IICB, Kolkata	Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA	Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138

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72	D. Suresh	GATE	National Institute of Bioinformatics, Bangalore		
73	Saurabh Bhanushali				MD of Aquamax Pvt. Ltd
BATCH: 2011-2013					
74	Dr. Ankita Sharma	CSIR NET	ILS, Bhubaneswar		Postdoctorate Research associate at Biologicke centrum AVCR, Czech Republic
75	Dr. Ahmad Khan	NET	ILS, Bhubaneswar		Postdoctorate Research associate at Biologicke centrum AVCR, Czech Republic
76	Nisha Raj	ICMR	Sanjay Gandhi Post Graduate Institute of Medical Sciences(SG PGIMS), Lucknow		
77	Nidhi Singh Parmar	GATE	BHU, Varanasi		
78	Pallavi Shejpal	GATE	NIPER, Mohali		
79	Sadhana Behera	NET/OAS			Orissa Administrative Service
80	Preeti Agrawal		Research Assistant at Ella Foundation, Hyderabad		
BATCH: 2012-2014					
81	Devbrat Kunvar	NET/DBT/GATE	JNU, New Delhi		

82	AnupamApoorva	NET/DBT	IIT, Kharagpur		
83	Indranil Das		Assam University		
84	Neha Pnadey				Clerk at Central Bank of India, Kanpur
85	AnkitaDatey		ILS, Bhubaneswar		
86	Kavya Singh Chouhan				Lecturer at Government college ,Rajnandgaon
87	DevyaniChakrabarty	GATE			Project Manager at TransPerfect, Pune, Maharashtra
88	SoumyaSouravMohapatr a				

BATCH: 2013-2015

89	SukanyaPati	NET/DBT	KIIT University, Bhubaneswar		
90	Neha Jain	NET	NIT, Rourkela		
91	SoumyaBasu		National Forest Research Institute, Dehradun		
92	Nimisha	JNU	SRF, ICGEB, New Delhi		
93	Sunil Pani	NET-AS	KIIT, Bhubaneswar		

BATCH: 2014-2016

94	VarshaMohapatra	NET/DBT/GATE	IISc, Bangalore		
95	RuchiKumari	DBT	IIT, Delhi		
96	Anurag Singhal	GATE			Quality Specialist at Amazon India, Hyderabad
97	IshitaBasu				Work at Deloitte Consulting US-India Pvt. Ltd. Bangalore
98	IpshitaShibani				SME at Chegg India, Bhubaneswar
99	Subhashree Das				Assistant Manager, State Bank of India
100	PratyashaPratishkya	DBT/GATE			
101	GeetanjaliRajhansa		Ravenshaw University		
102	PratimaHanshda				
BATCH: 2015-2017					
103	Suraj Sharma				Research Associate at Enzene Biosciences Ltd, Bangalore
104	Upasana Pal		Institute of Applied Microbiology, RWTH Aachen University, Germany		
105	Pratikshya Sa	UGC-JRF/GATE	Institute of Life Sciences Bhubaneswar		

106	Poonam Das	GATE/ NET-AS	Utkal University		
107	Janmejaya Bag	GATE	NIT, Raurkela		
108	SanjuSalima Ekka	GATE	Sambalpur University		
109	Divyani Martha	GATE			
110	GunchaeShadab				
BATCH:2016-2018					
111	MonalishaOjha	CSIR-JRF, GATE	NIT, Rourkela		
112	PritiRanjanSahoo	CSIR-JRF, GATE	IISER, Bhopal		
113	ShaistaShabbi		Shiv Nadar University, Delhi		
114	Ankita Pal	GATE			IQVIA, RDS Bangalore Location
115	SoumyaRanjan Dash	CSIR-JRF, GATE	KIIT University, Bhubaneswar		
116	Bibhu RanjanKhatua	CSIR-JRF			
117	Sharada Hembram				
118	Swagatika Parida	GATE			

119	Kiran Samal				
120	Annu Priya				
BATCH: 2017-2019					
121	Saheli Saha	NET-LS, GATE	IISc, Bangalore		
122	Susmita Ghosh	NET-LS, GATE	<i>Leibniz- Institut für An- alytische Wiss- enschaften, Germany</i>		
123	Swagatika Behera	GATE	M.Tech. at IICT, Mumbai		Lupin Biotech, Bangalore
124	Ananya Ghosh	GATE	Research Trainee at MedGenome Labs Ltd, Bangalore		
125	Singdha Sarita Baliarsingh				OFS
126	Subhasis Mahari	CSIR- JRF	NIAB, Hyderabad		State pollution control Board
127	Deepak Jha	CSIR-JRF GATE	ILS, Bhubaneswar		
128	Priti Kumari		MTech at IICT, Mumbai		Biocon Biologics, Bangalore, Karnataka
129	Madhurima Mandal	NET-LS, GATE	School of Medical Science and Technology, IIT Kharagpur		
130	Supriya Samal	CSIR-JRF, GATE	NISER, Bhubaneswar		

131	Anwesha Panda				
132	Preety Barla	NET-JRF	ILS, Bhubaneswar		
133	Sonali Mohapatra				
134	Ranjeeta Paleya	EpisourceIndPvt Ltd			
BATCH: 2018-2020					
135	Rima Samanta	GATE	<i>SRF, International Centre for FMD (ICFM D) under ICAR, Bhubaneswa r</i>		L V Prasad Eye Institute, Hyderabad
136	Namrata Kanungo	GATE, DST- Inspire	Utkal University		
137	Niladri Haldar	NET-JRF, DBT- JRF	JRF at Agharkar Research Institute, Pune		
138	Sayani Das	DBT-JRF	ILS, Bhubaneswar		
139	Bristy Ganguli	GATE/ TIFR/ MPhil	JRF, CIFA, Bhubaneswar		
140	Nishi Pragyan Naik	GATE, NET-JRF	ILS, Bhubaneswar		
141	Vinayak Nayak	GATE/ ICAR- JRF	SRF, International Centre for FMD (ICFM D)		

			under ICAR, Bhubaneswar		
142	Rajashree Nayak	GATE			
143	Madhumati Majhi	ICAR-JRF	Utkal University		Technical assistant at Utkal University
144	Sugyani Priyadarshini	GATE			
145	Deeptimayee Dhal				Pursuing Advance program in Clinical Research & Management
146	Nibedita Murmu				
147	Subhashree Priyadarshini Sahoo				
BATCH: 2019-2021					
148	Daamini Pattnaik	GATE			Innovation Management & Research at the office of the Controller General of Patents design and Trade Marks
149	Palak Khandelwal	GATE	Byju Coaching		
150	Pritiusha Pradhan	GATE/ TIFR	NISER, Bhubaneswar		
151	Raj Kumar Samata	GATE/ DBT-JRF	JRF at Agharkar Research Institute, Pune		
152	Priyanka Ray				

153	Monita Hansda				
154	Priti Jyotsna				
155	Niraj Kumar				
156	Kiran K Jena				
157	Ruchismita Nayak				
158	Sugyani Chudhury				
159	Shradhanjali Badaik				
BATCH: 2020-2022					
160	Abhisek Behera				Project Associate 1 at BITS, Pilani – Goa Campus
161	Anshuman Panda	GATE			M.Tech at Pondicherry University
162	Abinash K Jena	GATE-XL (AIR-08) GATE-BT (AIR-79)			
163	Ashutosh Parida	GATE			
164	Diptesh Chakraborty				
165	D Nishant Kumar	GATE	JRF at KIIT, Bhubaneswar		
166	Bhikari Katria				

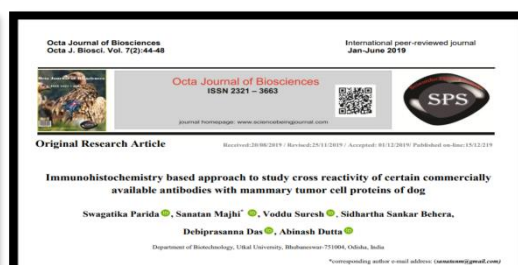
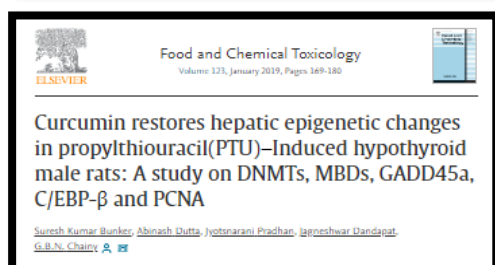
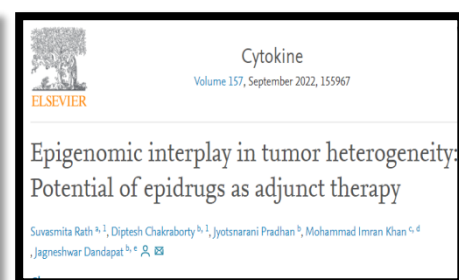
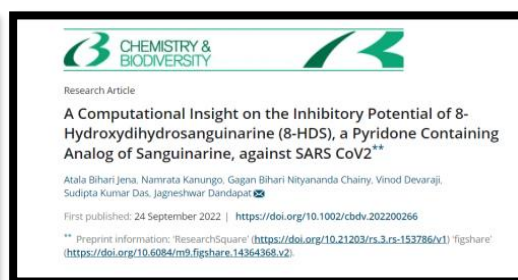
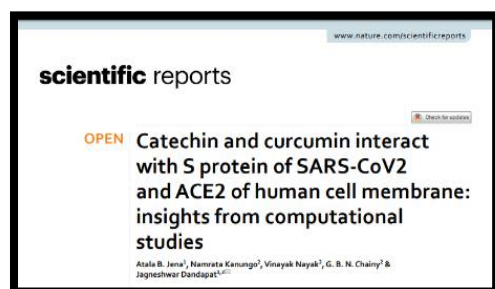
167	Santosh K Sethy	GATE, NET JRF			
168	Rajsekhar Naidu	GATE	Project Fellow at National Institute of Nutrition, Hyderabad		
169	Tulesh K Bariha				
170	Shivam Kesharwani	DBT-JRF, GATE, TIFR			
171	SK Rameej Raja	GATE, NET-LS	CSIR-IMMT		
172	Malaya K Bhoi				
173	Gourav Naik				
174	Monalisha Padhiary	GATE, DST-INSPIRE, DBT CAT-2			
175	Pooja Gundure	GATE			
176	Ankita Sharma				
177	Sayantani Bhattacharya				
178	Soumyashree Dash				
179	Swarnalata Pradhan				

180	Manisha Das				
181	Bhabani Mishra				
182	Jagatjita Mallick	NET-LS,GATE			
183	Nibha Nijjyot				
184	Bilasini Hanhaga				
185	Jashaswi Priyadarshini Jena	DBT-JRF			

Best Practices Successfully Implemented by the Institution

- Research freedom and in-depth research training which enables them to come up with out of box ideas and publish papers in peer-reviewed journals
- Motivation of students for entrepreneurship and initiate their own start-ups
- Voice of Alumni is a dedicated programme for motivation, inspiration and mentoring of M.Sc. students and research scholars.
- Department provides financial, moral support and health security to support socially and economically underprivileged students during their needs.

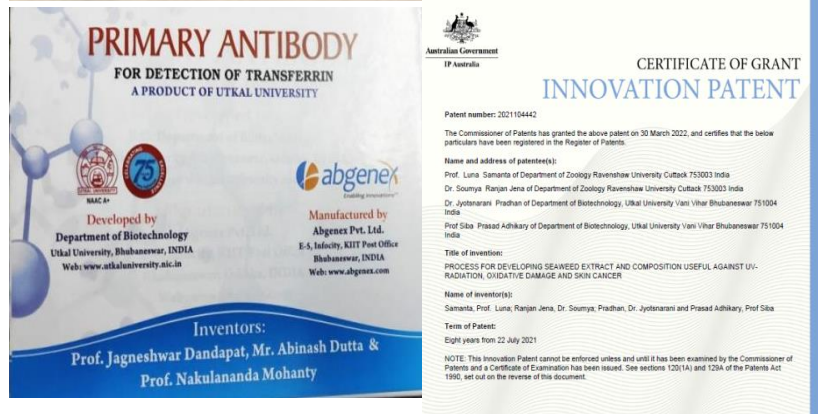
Publications of M.Sc. Students



Department at Print and Electronic media



Happy to share that the Department of Biotechnology, Utkal University has identified and developed a polyclonal anti-Transferrin antibody. The indigenously developed product has a wide range of applications in treating blood, tissue and iron related physiological dysfunctions.



FUTURE PLANS

- ❖ To be the centre of excellence in teaching, research and skill development in the emerging areas of Biotechnology.
- ❖ More International and National collaborations for interdisciplinary research.
- ❖ Establishment of Biotechnology Resource Centre for upliftment of society and scientific community.
- ❖ Bio-bank facilities for promotion of research for underprivileged under graduate colleges.

PHOTO GALLERY

Co-curriculum Activities



Academics Activity



Platinum Jubilee distinguished lecture series



National Seminar



Social Activities



Symposium



Industrial visit



Picnic



Annual Function



Puja



Festivals

