

## Instruction to the candidates

### Applications for Admission into M.Sc. Biotechnology (through GAT-B score) course for the Session 2024-25

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 2024-25. Candidates are advised to download the application form from the University website ([www.utkaluniversity.ac.in](http://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](mailto:hodbiotechnology@utkaluniversity.ac.in)) by **10<sup>th</sup> July 2024 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](mailto:jd.biotech@utkaluniversity.ac.in); M: +918280080720 +919437466087), Dr. Jyotsnarani Pradhan (Email: [jyotsna.biotech@utkaluniversity.ac.in](mailto:jyotsna.biotech@utkaluniversity.ac.in); M: +91-9853411916) and Dr. Sanatan Majhi (Email: [sanatan.biotech@utkaluniversity.ac.in](mailto: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)

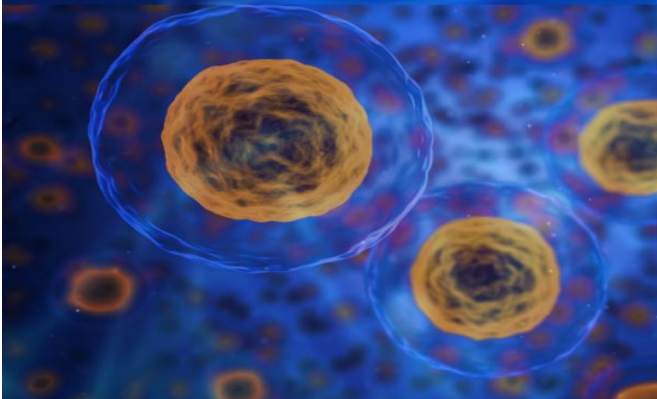
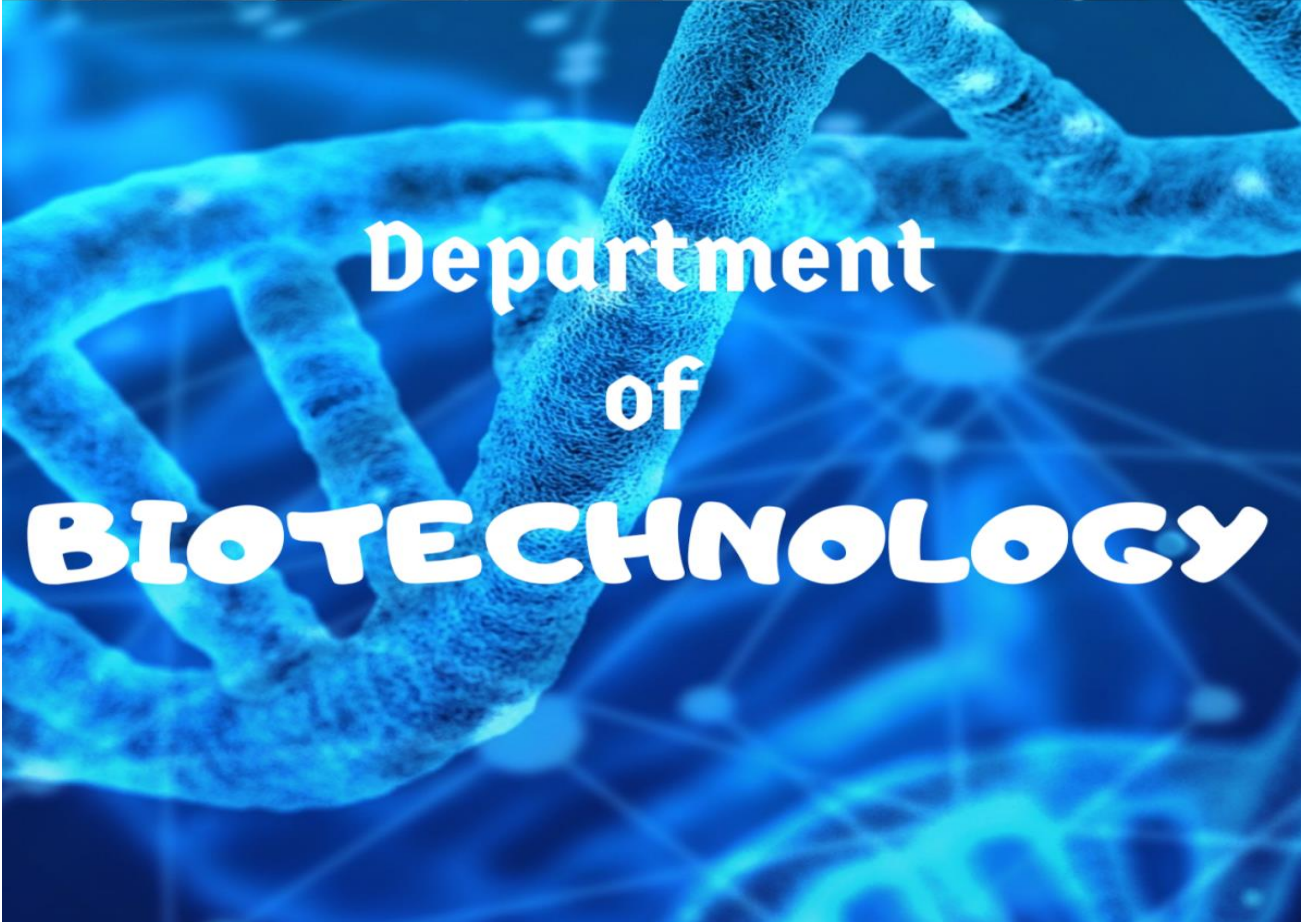
#### ELIGIBILITY CRITERIA

- 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 Profile and Facilities Available



# P.G. Department of Biotechnology

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



## Pioneers of the Biotechnology Department

### A brief profile of the Department

Post Graduate Department of Biotechnology was established in the year 2002. The M.Sc. Biotechnology teaching programme offered by the Department is supported by the Department of Biotechnology, Govt. of India, New Delhi, under Human Resource Development Programme. 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, Biotechniques, Molecular Biology, Enzyme and Bioprocess Technology, Immunology, Environmental Biotechnology, Biostatistics, Bioinformatics and Bioentrepreneurship. Recently, the Department has also adopted choice based curriculum for M. Sc. students based on DBT model syllabus and UGC guidelines. Students pursuing M.Sc. programme get fellowship from DBT, Govt. of India and Odisha State Government. The Department has Ph.D. programme in Biotechnology for the Students of Biotechnology and other science disciplines.

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

### National & International Collaborations

Institute of Life Science, Bhubaneswar; The Maharaja Sriram Chandra Bhanja Deo University, Baripada; Institute of Physics, Bhubaneswar; National Institute of Science Education and Research is a research institution, Jatani; Regional Plant Resource Center Bhubaneswar; Institute of Minerals and Materials Technology, Bhubaneswar

Mississippi state university, USA; RIKEN, Japan; Goethe University Frankfurt, Germany; Dongguk University, South Korea

### 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. Jagneshwar Dandapat (HOD)  
Assistant Professor : Dr. Jyotsnarani Pradhan  
Dr. Sanatan Majhi  
Guest Faculty : Dr. Amruta Mohapatra

## 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 Institute of Life Sciences, Bhubaneswar, CSIR- Institute of Minerals and Materials Technology, Bhubaneswar, National Institute of Science Education and Research, Bhubaneswar, ICMR-Regional Medical Research Center, Bhubaneswar are also associated with the academic program of the Department as invited/visiting faculty for teaching & extramural lectures.

## 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, CO<sub>2</sub> 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



Animal Cell Culture Facility



**Scholarly Activities, outreach programmes and extension of research support: The Department has organised National Seminar, Refresher courses, skill development programme (for Collage and University teachers) and popular lecturers 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.** FRI, Dehradun

**6.** Shiv Nadar University, New Delhi

**7.** Lucknow University, Lucknow

**8.** SGPGIMS, Lucknow

**9.** Magadh University, Gaya

**10.** Vinoba Bhave University, Hazaribagh

**11.** Assam University, Silchar

**12.** ICMR - NICE, Kolkata

**13.** Visva Bharati University, Shanti Niketan

**14.** IIT, Kharagpur

**15.** KIIT University, Bhubaneswar

**16.** NIT, Rourkela

**17.** Sambalpur University, Sambalpur

**18.** ICAR - CIFA, Bhubaneswar

**19.** ICAR - ICFMD, Bhubaneswar

**20.** Agharkar Research Institute, Pune

**21.** CSIR - NCL, Pune

**22.** ICT, Mumbai

**23.** CDFD, Hyderabad

**1.** Purdue University, Indiana, USA

**2.** University of Wisconsin, Madison, USA

**3.** Harvard University, Cambridge Ma, USA

**4.** Toronto Metropolitan University, Toronto, Canada

**5.** National Institute of Health, Bethesda, USA

**6.** Uppsala University, Uppsala, Sweden

**7.** Karolinska Institute, Stockholm, Sweden

**8.** RWTH Aachen University, Aachen, Germany

**9.** Jamia Millia Islamia, New Delhi

**10.** JNU, New Delhi

**11.** ICGEB, New Delhi

**12.** NII, New Delhi

**13.** University of California, Los Angeles, USA

**14.** University of Iowa Hospitals & Clinics, Iowa City, USA

**15.** Cleveland Clinic, Ohio, USA

**16.** Florida State University, Florida, USA

**17.** Virginia Commonwealth University, Richmond, USA

**18.** University of Pittsburgh, Pennsylvania, USA

**19.** Johns Hopkins University, Baltimore, USA

**20.** Upmc Hillman Cancer Center, Pitsburg, USA

**21.** The Hebrew University of Jerusalem, Jerusalem, Israel

**22.** Institute of Bioenergy & Bioprocess Technology, Shandong Sheng, China

**23.** Bangalore University, JNCASR, Bengaluru

**24.** Indian Institute of Science, Bengaluru

**25.** Bangalore City University, Bengaluru

**26.** IBAB, Bangalore

**27.** Pondicherry University, Pondicherry

**28.** Vellore Institute of Technology Chennai

**29.** Indian Institute of Technology Madras

**30.** IICB, Kolkata

**31.** Ravenshaw University, Cuttack

**32.** MSCBDU, Baripada

**33.** Institute of Life Sciences, Bhubaneswar

**34.** Utkal University, Bhubaneswar

**35.** CSIR - IMMT, Bhubaneswar

**36.** NISER, Jatani

**37.** IICB, Kolkata

**38.** NEHU, Shillong

**39.** Assam University, Silchar

**40.** IIT, Lucknow

**41.** Banaras Hindu University

**42.** Citryll B.V., Utrecht, Netherlands

**43.** Jammu and Kashmir

**44.** Punjab

**45.** Haryana

**46.** Uttar Pradesh

**47.** Bihar

**48.** West Bengal

**49.** Odisha

**50.** Chhattisgarh

**51.** Madhya Pradesh

**52.** IISER, Bhopal

**53.** Rajasthan

**54.** Central University of Rajasthan, Rajasthan

**55.** Goethe University, Frankfurt, Germany

**56.** Biological Centrum Avc, South Bohemia, Czech Republic

**57.** University of Freiburg, Baden-Württemberg, Germany

**58.** University of Johannesburg, Johannesburg, South Africa

**59.** Karnataka

**60.** Andhra Pradesh

**61.** Maharashtra

**62.** Telangana

**63.** IICB, Kolkata

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**100.** IICB, Kolkata



# 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



LUPIN

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

2015-2017

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

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

2014-2016

2014-2016

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

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

2009-2011

2012-2014

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

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

2004-2006

2008-2010

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

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

2002-2004

2002-2004

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

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

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

ORIGINAL ARTICLE

Biomarkers & Neuroimaging 81 (2016) 31–37

Available online at ScienceDirect  
www.sciencedirect.com

Elsevier Masson France  
EMconsulte  
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>

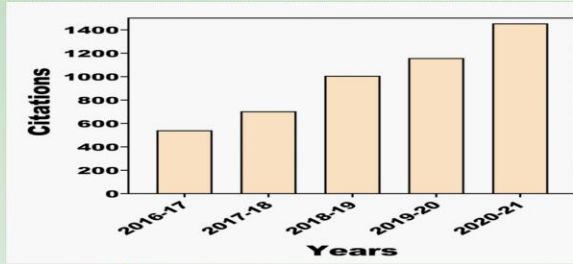
Biomaterials Science  
ROYAL SOCIETY OF CHEMISTRY

REVIEW

View Article Online  
View Journal

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.ac.in

Manufactured by  
Abgenex Pvt. Ltd.  
E-5, Indraya, KIT Post Office  
Bhubaneswar, INDIA.  
Web: www.abgenex.com

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

ଉତ୍କଳ ବିଶ୍ୱବିଦ୍ୟାଳୟର ଉପକ୍ରମଣକାରୀ ସେବା ଉତ୍ପାଦନ

ଲୌହପାର ନିୟନ୍ତ୍ରଣ ପାଇଁ ନୂଆ ଆଣ୍ଟିବଡି

ଆଇରନ୍ ମାପୁ ମାପିବ ଆଣ୍ଟିବଡି

ଉତ୍କଳ ବିଶ୍ୱବିଦ୍ୟାଳୟର ଉପକ୍ରମଣକାରୀ ସେବା ଉତ୍ପାଦନ

CERTIFICATE OF GRANT  
INNOVATION PATENT

Patent number: 202104442

The Commissioner of Patents has granted the above patent on 30 March 2022, and published the below particulars have been registered in the Register of Patents:

Name and address of patentee(s)  
Prof. Laxmi Senapati of Department of Zoology Ravenshaw University Cutack 753003 India  
Dr. Soumya Pradhan Jena of Department of Zoology Ravenshaw University Cutack 753003 India  
Dr. Jayashankar Pradhan of Department of Biotechnology, Utkal University Van Vihar Bhubaneswar 751004 India  
Prof. Siba Prasad Acharya of Department of Biotechnology, Utkal University Van Vihar Bhubaneswar 751004 India

Title of invention  
PROCESS FOR DEVELOPING SEPARATED EXTRACT AND COMPOSITION USEFUL AGAINST UV-RADIATION, OXIDATIVE DAMAGE AND SKIN CANCER

Name of inventor(s)  
Sanku, Prof. Laxmi, Rajan-Jena, Dr. Soumya, Pradhan, Dr. Jayashankar and Prasad Acharya, Prof. Siba

Date of Patent  
Epat views from 22 July 2021

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Grant has been issued. See sections 120 & 121 of the Patent Act, 1999, set out in the reverse of this document.

EXPRESSION NEWS SERVICE  
SUNDAY EXPRESS  
Bhubaneswar  
SUNDAY 28.11.2021

Pradhan asks Utkal varsity to aim for global rankings

EXPRESSION NEWS SERVICE

Utkal University Vice-Chancellor Prof. Jayashankar Pradhan has asked the varsity to aim for global rankings. He said that the varsity should focus on research and innovation to improve its global standing.

Pradhan said that the varsity should focus on research and innovation to improve its global standing. He said that the varsity should focus on research and innovation to improve its global standing.

**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 program.

## 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. Jyotsnarani Pradhan	Assistant Professor	M.Sc., Ph.D.
3.	Dr. Sanatan Majhi	Assistant Professor	B. V. Sc & A.H., M.V. Sc., Ph.D.
4.	Dr. Amruta Mohapatra	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. PROGRAMMES OFFERED

- M.Sc. : 33
- Ph.D. : 16

### 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  
Credits)

(40 Lectures / 6

Paper-103 Instrumentation & Analytical techniques

(40 Lectures / 6 Credits)

Paper-104 Biostatistics and Computational Biology

(40 Lectures / 6 Credits)

Paper-105 PRACTICAL-I  
Credits)

(60 Practical Classes / 5

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  
Credits)

(60 Practical Classes / 5

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.	<b>Paper-101</b>	<b>Biochemistry</b>	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 = 90 Practical +10 Seminar	6	

### SECOND SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
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1.	Paper-201	Microbiology	100 = (70 End Sem)+30 (Mid Sem)	6	
2.	Paper-202	Immunobiology and Immunotechnology	100 = (70 End Sem)+30 (Mid Sem)	6	
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 = 90 Practical +10 Seminar	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	<b>Core Elective courses</b> CE-1: Plant Biotechnology/ CE-2: Microbial Technology/ CE-3: Proteomics	100=70(End- Sem)+30 (Mid- Sem)	6	
4.	Paper-304	<b>Allied Elective courses</b> 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=90 Practical +10 Seminar	5  1	

### FOURTH SEMESTER

S.N.	Course Code	Course Name	Marks	Cr.	Remarks
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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 and Living Processes			
3.	Paper-403	Research aptitude, Scientific communication and Bio-entrepreneurship	100	4	
<b>Project Work: 404</b>			<b>(300 Marks, 20 Credits)</b>		
1.	Dissertation		200		
2.	Seminar presentation and Viva Voce		50+50		
<b>Total</b>	<b>20</b>		<b>2000</b>	<b>120</b>	

### 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.

**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 correction 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-IIIMarks: 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	ResearchMethodology/ Tools and Techniques in Biotechnology	100
2	II	Biostatistics and Computational Biology	100
3	III	1. Reviewof Literature:50marks 2. PresentationbeforeSRC:50 marks	100
4	IV	1. Seminar-I:50marks 2. Seminar-II:50marks	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-mailID:**[jdandapat.nou@gmail.com](mailto:jdandapat.nou@gmail.com), [jd.biotech@utkaluniversity.ac.in](mailto: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 -06
- Mentoring of Post Doctoral Students: 06
- Mentoring of M.Phil. Students: 08

- M. Sc. Students: 39 + 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. Jema JP, Pradhan J, Chainy GB, Hati AK, Nayak D, Kaushik S, Dandapat J. COVID-19 Cases and Comorbidities: Complementary and Alternative Medicinal Systems (CAM) for Integrated Management of the Pandemic. *Journal of Herbal Medicine*. 2023 Dec 1;42:100745.
2. Rath, S., Jema, J.P., Kesavan, K., Mallick, S., Pradhan, J., Chainy, G.B.N., Nayak, D., Kaushik, S. and Dandapat, J., 2024. Arsenic album 30C exhibits crystalline nano structure of arsenic trioxide and modulates innate immune markers in murine macrophage cell lines. *Scientific Reports*, 14(1), p.745.
3. 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.
4. Bioactive potential of morin loaded mesoporous silica nanoparticles: A noble 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.
5. 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.
6. 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.
7. 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.
8. 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.

9. 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-.
10. CTK7A, a curcumin derivative, can be a potential candidate for targeting HIF-1 $\alpha$ /p300 complex: Evidences from in vitro and computational studies. S Rath, AB Jena, A Bhattacharyya, J Dandapat - *Biophysical Chemistry*, 2022
11. Therapeutic potential and ethnopharmacology of dominant mangroves of Bhitarkanika National Park, Odisha, India. SK Das, B Das, AB Jena, CPradhan, GSahoo, JDandapat. *Chemistry&Biodiversity*, 2022 Feb 1.
12. 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 NityanandaChainy, JagneshwarDandapat, Akshaya Kumar Hati, Laxmikanta Nanda. *Phytomedicine Plus*, 1(4), 100115. doi:10.1016/j.phyflu.2021.100115.
13. 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.
14. 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
15. The modulatory role of prime identified compounds in *Geophila repens* in mitigating scopolamine-induced neurotoxicity in experimental rats of Alzheimer's disease via attenuation of cholinesterase,  $\beta$ -secretase, MAPt levels and inhibition of oxidative stress imparts inflammation.
16. Factors regulating dynamics of angiotensin-converting enzyme-2 (ACE2), the gateway of SARS-CoV-2: Epigenetic modifications and therapeutic interventions by epidrugs. Suvasmita Rath, Venkateswarlu Perikala, Atala Bihari Jena, Jagneshwar Dandapat. *Biomedicine & Pharmacotherapy*, 143, 112095. doi:10.1016/j.biopha.2021.112095
17. 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.
18. 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
19. 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
20. 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>
21. The benzene metabolite p-benzoquinone inhibits the catalytic activity of bovine liver catalase: A biophysical study. Atala B. Jena, Rashmi R. Samal, Kanchan Kumari, Jyotsnarani Pradhan, Gagan B. N. Chainy, Umakanta Subudhi, Satyanarayan Pal, Jagneshwar Dandapat. *International journal of biological macromolecules*. (2021) vol. 167: 871-880. doi:10.1016/j.ijbiomac.2020.11.044.



22. Recombinant expression, purification and SAXS analysis of Arabidopsis thaliana ClpC1. Manas K. Jagdev, Jagdishwar Dandapat, Dileep Vasudevan. International Journal of Biological Macromolecules. (2021) 167, 1273–1280.
23. 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, Jagdishwar Dandapat. B Rath. RUDN Journal of Medicine, (2021) 25 (1), 55-65.
24. Leaf Extract of Nerium oleander L. Inhibits Cell Proliferation, Migration and Arrest of Cell Cycle at G2/M Phase in HeLa Cervical Cancer Cell. Shubhasmita Mohapatra, Anil K. Biswal, Jagdishwar Dandapat & Priya R. Debata. Anti-Cancer Agents in Medicinal Chemistry (2020); doi: 10.2174/18715206206662008111214005.
25. 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, Jagdishwar Dandapat, Atish Kumar Sahoo. Bioorganic chemistry, (2019) 88, 102947. <https://doi.org/10.1016/j.bioorg..102947>.
26. First report on transferrin in the silkworm, Antheraea mylitta, with a putative role in antioxidant defense: Insights from proteomic analysis and immunodetection. Abinash Dutta, Jagdishwar Dandapat, Nakulananda Mohanty. Comparative Biochemistry and Physiology. (2019); Part B 233: pp. 23-34. doi.org/10.1016/j.cbpb.2019.03.010.
27. Curcumin restores hepatic epigenetic changes in propylthiouracil (PTU) induced hypothyroid male rats: A study on DNMTs, MBDs, GADD45a, C/EBP- $\beta$  and PCNA. Suresh Kumar Bunker, Abinash Dutta, Jyotsnarani Pradhan, Jagdishwar Dandapat & G.B.N. Chainy. Food and Chemical Toxicology (2019); 123. 2019, doi.org/10.1016/j.fct.10.050.
28. Pro-inflammatory cytokine Interleukin-1 $\beta$  (IL-1 $\beta$ ) controls Leishmania infection. Tejaswini Patil, Vasundhara More, Deepti Rane, Arkajyoti Mukherjee, Rahul Suresh, Ashok Patidar, Neelam Bodhale, David Mosser, Jagdishwar Dandapat, Arup Sarkar. Cytokine. (2018); doi.org/10.1016/j.cyto.2018.06.033.
29. Neutrophils: Interplay between host defense, cellular metabolism and intracellular infection. Deepti Rane, Tejaswini Patil, Vasundhara More, Sushree Sangita Patra, Neelam Bodhale, Jagdishwar Dandapat & Arup Sarkar. Cytokine (2018); doi.org/10.1016/j.cyto.2018.07.009.
30. 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, Jagdishwar Dandapat & Nakulananda Mohanty. Journal of Entomology and Zoology Studies (2018); E-ISSN: 2320-7078 P-ISSN: 2349-6800, 136-142.
31. 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 Zandbergen, Werner Solbach, Jagdishwar Dandapat, Heidi Tackenberg, Mareike Ohms, Arup Sarkar, Tamas Laskay. Cytokine. (2018); doi.org/10.1016/j.cyto.2018.06.027.
32. Low H<sub>2</sub>O<sub>2</sub> 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.
33. 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.
  34. 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. & Kanhar, S. *Journal of Ethnopharmacology*(2017); 215: pp.42-73.
  35. 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. *European Thyroid Journal*. (2017); 6: pp.281-291.
  36. 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.
  37. 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.
  38. 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.
  39. 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.
  40. Neonatal persistent exposure to 6 propyl- 2 Thiouracil, A Thyroid disrupting chemical, differentially modulates expression of hepatic catalase and C/EBP- $\beta$  in adult rats. SK Bunker, J Dandapat, SK Sahoo, A Ray, GBN Chainy. *Journal of Biochemical & Molecular Toxicology*. (2015); DOI: 10.1002/jbt.21766.
  41. Hypothyroidism impairs antioxidant defence system and histoarchitecture of cerebral cortex of rat brain during postnatal development. Srikanta Jena, Shrivani Bhanja, Jagneshwar Dandapat, Gagan B.N. Chainy. *Int. J. Devl Neuroscience* 47. (2015); doi.org/10.1016/j.ijdevneu.2015.04.202.
  42. 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
  43. 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.

44. 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.
45. 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.
46. 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.
47. 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 .
48. Effect of heavy metals on growth response and antioxidant defense protection in *Bacillus cerus*.M Behera, J Dandapat, CC Rath.*J of Basic Microbiol*. (2014); 54: 1201-1209.
49. 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.
50. 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.
51. 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).
52. 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.
53. 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.
54. 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, Jagneshwar Dandapat, Chandi C. Rath. *Bioremediation, Biodiversity and Bioavailability*. (2009); 3 (2): 72-78.8.
55. 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.
56. Lipid Peroxidation and nonenzymetic antioxidants, Glutathione and ascorbic acid, in a carp, *Labio rohita*.A. Sahoo, M.Patra and J. Dandapat. *Asian Journal of Microbiology Biotechnology and Environmental Science*. (2008); 10 (127-130).
57. Non-enzymatic antioxidant status and modulation of lipid peroxidation in the muscles of *Labeo rohita* by sub lethal exposure of CuSO<sub>4</sub>.S. D. Jena & M. Behera&J. Dandapat& N. Mohanty. *Vet Res Commun*(2009);33:421–429, DOI 10.1007/s11259-008-9188-x.

58. Lipid peroxidation and antioxidant defence status during larval development and metamorphosis of giant prawn, *Macrobrachium rosenbergii*. Jagneshwar Dandapat, Gagan B.N. Chainya, K. Janardhana Rao. *Comparative Biochemistry and Physiology Part C*. (2003); 135: 221–233.
59. Improved post larval production in Giant Prawn *Macrobrachium rosenbergii* through modulation of antioxidant defense system by Dietary Vitamin-E. Jagneshwar Dandapat, GBN Chainy and K Janardhana Rao. *Indian Journal Of Biotechnology*. (2003); 2:195-202.
60. 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.
61. Dietary vitamin-E modulates antioxidant defence system in giant freshwater prawn, *Macrobrachium rosenbergii*. Jagneshwar Dandapat, Gagan B.N. Chainy, K. Janardhana Rao. *Comparative Biochemistry and Physiology Part C*. (2000); 127: 101–115.
62. Antioxidant defence system in giant prawn *Macrobrachium rosenbergii*. Jagneshwar Dandapat, Gagan B.N. Chainy. (2001), <http://hdl.handle.net/10603/227825>
63. An in vitro study of metal ion-induced lipid peroxidation in giant fresh water prawn *Macrobrachium rosenbergii* (de MAN). Jagneshwar 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 (4-HNE) 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 Chemist 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, JagneshwarDandapat, Gagan B. N. Chainy, Laxmikanta Nanda Effect of homoeopathic preparations of Rauwolfia serpentine ondeoxycorticosterone 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, JagneshwarDandapat, 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 29 th-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, JagneshwarDandapat (2014) “Modulation of rat kidney SOD expression by homoeopathic preparations of Rauwolfia serpentine ondeoxycorticosterone acetate (DOCA)-salt-induced hypertensive rats.”83rd Annual Meeting of the Society of Biological Chemist 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 cella of neonatal hypothyroid wistar rats.” 83rd Annual Meeting of the Society of Biological Chemist 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.

### 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, Bhabha 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 21<sup>st</sup> to 22<sup>nd</sup> 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. CA 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 3<sup>rd</sup> January 2012 to & 7<sup>th</sup> 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 Indian 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: Present 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 Nanakdev University, Amritsar
- Barkatulla University, Bhopal
- University of Burdwan, JNU, New Delhi; Bharatiya 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
- Co-coordinator, DBT-MSc Program
- Centre Superintendent MSc Biotechnology Examination
- Admission In Charge, MSc Biotechnology Program

**Phone No:** 9853411916

**E-mail ID:** [jyotsna.biotech@utkaluniversity.ac.in](mailto:jyotsna.biotech@utkaluniversity.ac.in);  
[jyotsna017@gmail.com](mailto:jyotsna017@gmail.com)

**Area of Research:**

- Phytotherapy
- Biochemistry and Molecular biology
- Applied microbiology

**Courses Taught:**

Cell & Molecular Biology, Biomolecules, Biochemistry, Genetic engineering & Animal Biotechnology

**Educational Qualification:**

Degree	Subject	Institution/Board	Year
Ph.D.	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 the 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 Curcumin.
- M.Sc. Project/Dissertation; **32 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 homeopathic 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) (2023-2026) (On going)
- Project entitled “Understanding the molecular mechanism of Anti-thyroid drug PTU-induced redox imbalance and epigenetic alteration” Funded by DST, Govt. of Odisha(Co-PI)(2024-2027)

### **Research Publications:**

#### **Journal Articles:**

- Behera AK, Pattnaik SS, Mohanty C, Srivastav R, Pradhan J. Mechanical and cytotoxic analysis of cutlery developed from phenol-formaldehyde modified soy-jute composite. **Vietnam Journal of Chemistry**. 2024, Vol.62(2), 151-159.
- Rath, S., Jema, J.P., Kesavan, K., Mallick, S., Pradhan, J., Chainy, G.B.N., Nayak, D., Kaushik, S. and Dandapat, J., 2024. Arsenic album 30C exhibits crystalline nano structure of arsenic trioxide and modulates innate immune markers in murine macrophage cell lines. **Scientific Reports**, 14(1), p.745.



- Jema JP, Pradhan J, Chainy GB, Hati AK, Nayak D, Kaushik S, Dandapat J. COVID-19 Cases and Comorbidities: Complementary and Alternative Medicinal Systems (CAM) for Integrated Management of the Pandemic. **Journal of Herbal Medicine**. 2023 Dec 1;42:100745.
- 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- $\beta$  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 16<sup>th</sup>-19<sup>th</sup>, 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. 16<sup>th</sup> and 17<sup>th</sup> 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 1<sup>st</sup>-2<sup>nd</sup> 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. 15<sup>th</sup> and 16<sup>th</sup> 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.
- Participated and presented paper on “Phytochemical analysis and evaluation of antioxidant and photoprotective activities of *Gracilaria verrucosa* extract against UV-induced oxidative damage in fibroblast cells” at Odisha Research Scholar Conclave 2021, (ORC 2021) jointly organised by OSHEC and Utkal University Bhubaneswar during 13-15 November 2021 (Received 1<sup>st</sup> prize in Presentation in Biological section).
- Participated and presented paper on” Spectroscopic and Biophysical Interaction Studies of novel Ir(F2ppy)<sub>2</sub> N hydroxypiconilamide complex with calf thymus DNA for its potential Application in cancer research” at 36th Annual Conference of Orissa Chemical Society and National conference on Advances in Materials Chemistry and Applications (OCS-AMCA-2022) organized by Department of Chemistry, Utkal University, Bhubaneswar during December 18-19, 2022.
- Participated and presented paper on “Assessment of anti-inflammatory, antioxidant and photoprotective activities of hydroalcoholic extract of *Gracilaria verrucosa*” at Odisha Research Scholar Conclave 2022, (ORC 2022) jointly organised by OSHEC and Ravenshaw University Cuttack during 14-16 November 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.
- Cell culture facilities.
- Biochemical analysis.
- Confocal Microscopy

#### **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 DST-SERB Sponsored Two-day workshop on Basic Gene cloning and Transgenic Techniques 24-25th Feb 2024 at Dept. of Life Science, NIT Rourkela, Odisha
- Participated in Two-day workshop on Recombinant Protein purification and protein Crystallography 20-21 October, 2022, organized by Institute of Life Sciences, Bhubaneswar
- 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 (SFFR), 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:

- Microiology
- 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 Nano-particles 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, Saumya Srivastava, Sonal and B.P. Mishra. Cancer genetics and epigenetics: Two sides of the same coin, *Molecular Approaches for Diagnosis of Animal Cancers and Strategies for Developing cancer Vaccines*, Chapter-8, pp-93.
- Manoj Kumar, Vinod Chandra Pandey, Priyanka Sharma, Subas Chandra Jena, Saumya Srivastava, Sanatan Majhi, Sameer Shrivastava and Sonal, An overview of Cancers in animal species, *Molecular Approaches for Diagnosis 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 Majhia\* 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-8<sup>th</sup>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 -7<sup>th</sup> 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 theOdisha Research Conclave, organised under OURIIP, 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 – 30<sup>th</sup> 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 (UTA)
- 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: **Dr. AMRUTA MOHAPATRA Sc, Ph.D.**

Designation and current position:

- Guest Faculty

Phone no: +91-9438504826/7978359746

E-mail ID: amruta.may16@gmail.com

#### Area of Research:

- Microbiology
- Animal Biotechnology
- Immunology

#### Courses Taught:

Microbiology, Immunology, Molecular Biology

<b>EDUCATIONAL QUALIFICATIONS</b>		
<i>Name of Exam</i>	<i>University</i>	<i>Year of passing</i>
Ph.D.	Utkal University, Odisha, India	2019
M.Sc. (Biotechnology)	Ravenshaw University, Cuttack, Odisha, India	2010
B.Sc. (Biotechnology)	Orissa University of Agriculture and Technology, Odisha, India	2008
12 <sup>th</sup>	CBSE, India	2005
10 <sup>th</sup>	CBSE, India	2003

#### RESEARCH EXPERIENCES

<b>Durations</b>	<b>Designations</b>	<b>Place of Work</b>	<b>Project Title/Objective</b>
April 2022- May 2023	Research Associate (RA)	ILS, Bhubaneswar, Odisha, India	DBT-ILS Animal BSL-3 facility. Responsibilities: Designing and set-up of

			experiments in BSL-3 facility; Infection, harvesting of target tissues and downstream processing of tissues for evaluation of viral load and immune responses.
<b>November 2021- March 2022</b>	Quality control consultant	ILS, Bhubaneswar, Odisha, India	DBT BIRAC project “Establishment of a platform for experimental animal models to carry out preclinical evaluation of antivirals and vaccines against SARS-Cov2”
<b>September 2016– September 2019 (3 Years)</b>	Research Associate (RA)	ICAR-CIFA, Bhubaneswar, Odisha, India	ICAR-National Fellow Scheme funded project entitled “Development of Novel Immunopotentiator Molecules from Fish Host and Pathogens for Broad Spectrum Disease Control in Freshwater Aquaculture”
<b>June 2011 – April 2016 (5 years)</b>	Senior Research Fellow (SRF)	ICAR-CIFA, Bhubaneswar, Odisha, India	ICAR-National Fellow Scheme funded project entitled “Development of Novel Immunopotentiator Molecules from Fish Host and Pathogens for Broad Spectrum Disease Control in Freshwater Aquaculture”
<b>2009-2010 (6 months)</b>	<b>M. Sc (Dissertation)</b>	School of Life sciences, Jawaharlal Nehru University (JNU), New Delhi, India	Combinational effect of Berberine and Doxorubicin on prostate cancer cell line.

## TEACHING EXPERIENCES

Durations	Designations	Place of Work	Responsibility
February 2024- Continuing	Guest Faculty	Dept. of Biotechnology, Utkal University	Theory and practical classes, Guiding of PhD scholars, Exam duty and evaluation of papers, Preparation of syllabus and model question papers for students.

## TECHNICAL SKILLS AND EXPERTISES

- ❖ **Molecular Biology**- Nucleic acids extraction, PCR amplification, gel electrophoresis, competent cell preparation, cDNA preparation, real time PCR/qPCR, cloning, gel purification, gene knockout using siRNA technology.
- ❖ **Immunology**- Estimation of specific/non-specific immune parameters, ELISA, IF, IHC.
- ❖ **Histopathology**- Tissue processing, Block preparation, H&E Staining, Immunohisto chemistry, Immunofluorescence.
- ❖ **Proteomics**- Protein expression study and purification of desired protein, Affinity chromatography, Western blotting.
- ❖ **Virology**- Estimation of virus copy numbers, cytopathic effect, Plaque assay, Virus isolation.
- ❖ **Microbiological techniques**- Pure culture preparation, gram staining, endospore staining, determination of microbial growth curve, antibiotic sensitivity tests, biochemical tests related to microorganisms, determination of MBC/MIC.
- ❖ **Cell culture technique**- Establishment of primary culture and cell line (Fibroblast cell of hamster and pancreatic stellar cell of mice), MTT assay, IC<sub>50</sub> standardization.
- ❖ **Parasitology**- Identification of freshwater fish lice; male & female segregation; Egg collection and maintenance; development of challenge model; parasite maintenance in wet laboratory for year-round production.
- ❖ **Bioinformatics**- Basic bioinformatics tools for nucleic acid sequence analysis, protein structure prediction, MEGA, Clustal W, Domain prediction and antimicrobial region prediction.
- ❖ **Statistical Knowledge**- Research data analysis using statistical package like SPSS to determine ANOVA, non-parametric tests, t-test.
- ❖ **Handling of Experimental Animal**– Mice, Hamster and Fish, Animal BSL-3 experiments in hamster and ACE2 mice model, Wet lab maintenance,

Conducting challenge study, Estimation of TCID<sub>50</sub>/LD<sub>50</sub>, Collection of serum/Plasma, blood, tissue.

## AWARDS & RECOGNITIONS

- **Awarded for “Best Ph.D. Thesis”** during 3<sup>rd</sup> International Symposium on Genomics in Aquaculture (ISGA-3) 21 - 23 January 2020 at ICAR-CIFA organized by Association of Aquaculturists, Bhubaneswar, India; ICAR-CIFA, Odisha.
- **Received “Best Poster award”** by presenting a poster entitled “*Argulus siamensis* uses host Apolipoprotein A-I machinery for its survival: A proof of concept validated through SiRNA tool” during 3<sup>rd</sup> International Symposium on Genomics in Aquaculture (ISGA-3) 21 - 23 January 2020 at ICAR-CIFA organized by Association of Aquaculturists, Bhubaneswar, India; ICAR-CIFA, Odisha
- **Secured “Best Poster Presentation Award”** in Fisheries discipline at XIV Agricultural Science Congress, New Delhi during 21-23 February 2019.
- **Awarded for “Dr. T. Ramaprabhu Memorial Award”** for the year 2019 at ICAR-CIFA, Bhubaneswar for outstanding contribution to research and developmental activities of institute.
- **Conferred with “Young Scientist Award”** from **Asian Fisheries Society (Indian Branch)** by presenting a paper entitled “Molecular cloning, structural and functional characterization of hepcidin in Indian major carp, *Labeo rohita*” at Cochin during 11<sup>th</sup> IFAF 21-24 November 2017.
- **Awarded for “Dr. T. Ramaprabhu Memorial Award”** for the year 2016 at ICAR-CIFA, Bhubaneswar for outstanding contribution to research and developmental activities of institute.
- **Secured “Best Poster Presentation Award”** at 2<sup>nd</sup> International Symposium on Genomics in Aquaculture; 2016 Jan 28-30 held at ICAR-CIFA, Bhubaneswar, India.
- **Secured “Best Poster Presentation Award”** at 10<sup>th</sup> Indian Fisheries and Aquaculture Forum (10ifaf) during November 12-15, 2014 held at National Bureau of Fish Genetic Resources, Lucknow, India
- **Awarded for “Dr. B. R. Mohanty Memorial Award”** for the year 2015 at ICAR-CIFA, Bhubaneswar for outstanding contribution to research and developmental activities of institute.
- **Awarded for “Best Research Scholar Award”** for the year 2015 at ICAR-CIFA, Bhubaneswar for commendable contributions in research work.
- **Secured “Best Poster Presentation Award”** in “8<sup>th</sup> symposiums on Diseases In Asian Aquaculture” held at Mangalore, India.



## RESEARCH PUBLICATIONS

Sl. No.	Authors	Title of the research publication	Journal title with year of publication & volume and issue	Journal Impact factor
1.	Shradha Mawatwal, <b>Amruta Mohapatra</b> , Sayani Das, Aisurya Ray, Ratnadeep Mukherjee , Gulam	Prior exposure to malaria decreases SARS-CoV-2 mediated mortality in K18-hACE2 mice without influencing viral load in lungs	Communicated, 2024	
	Syed, Shantibushan Senapati, Balachandran Ravindran			
2.	Suresh V, Behera P, Parida D, Mohapatra AP, Das SK, Kumari S, Avula K, <b>Mohapatra A</b> , Syed GH, Senapati S	Therapeutic role of N-acetyl cysteine (NAC) for the treatment and/or management of SARS-CoV2-induced lung damage in hamster model	European Journal of Pharmacology <b>2023</b> ; 938:175392.	5.195
3.	Parida S, <b>Mohapatra A</b> , Das S, Sahoo PK	Cloning and characterization of linker histone H1 gene in rohu, <i>Labeo rohita</i>	Animal Biotechnology <b>2022</b> ; 33:745-756.	2.141
4.	Sahoo P K, Mishra M, <b>Mohapatra Amruta</b> , Parida Sonali, Mohanty J	Vaccination approach to prevent Argulus siamensis infection-success, challenges and preparedness	Fish and Shellfish Immunology Reports <b>2021</b> ; 2: 100023	4.581
5.	Parida S, <b>Mohapatra A</b> , Sahoo PK	Cloning and functional characterization of natural killer enhancing factor-B (NKEF-B) gene of <i>Labeo rohita</i> : antioxidant and antimicrobial activities of its recombinant protein.	Molecular Immunology <b>2020</b> ; 126:73-86.	4.174

6.	<b>Mohapatra A</b> , Dixit A, Garg LC, Sahoo PK	Hepcidin gene of Indian major carp, <i>Labeo rohita</i> : Molecular, structural and functional characterization, and antibacterial activity of recombinant hepcidin	Aquaculture <b>2019</b> ; 511:734218.	5.135
7.	<b>Mohapatra A</b> , Parida S, Mohanty J, Sahoo PK	Identification and functional characterization of a g- type lysozyme gene of <i>Labeo rohita</i> , an Indian major carp species.	Developmental & Comparative Immunology <b>2019</b> ; 92: 87-98.	3.605
8.	<b>Mohapatra A</b> , Das S, Dey S, Sahoo PK	Molecular characterization and induced expression analysis of terminal complement component C9 in rohu, <i>Labeo rohita</i> .	Aquaculture Research <b>2019</b> ; Doi: 10.1111/are.14487.	2.184
9.	Karan S, <b>Mohapatra A</b> , Sahoo PK, Garg LC, Dixit A	Structural-functional characterization of recombinant Apolipoprotein A-I from <i>Labeo rohita</i> demonstrates heat-resistant antimicrobial activity.	Applied Microbiology and Biotechnology <b>2019</b> ; Doi: 10.1007/s00253-019-10204-7.	5.56
10.	Sahoo PK, Parida S, <b>Mohapatra A</b> , Mohanty J	Selection of candidate reference genes for RT-qPCR analysis in <i>Argulus siamensis</i> under different patho-physiological states and their validation through screening of drugs and drug targets.	Scientific Reports <b>2019</b> ; 9:18365.	4.996
11.	Sharma A, Paul A, Parida S, Pattanayak S, <b>Mohapatra A</b> , Kumar PR, Sahoo MK, Sundaray JK, Sahoo PK	Dynamics of expression of antibacterial and antioxidant defence genes in Indian major carp, <i>Labeo rohita</i> in response to <i>Aeromonas hydrophila</i> infection.	Microbial pathogenesis <b>2018</b> ;125: 108-115.	3.848

12.	Parida S, <b>Mohapatra A</b> , Kar B, Mohanty J, Sahoo PK	Transcriptional analysis of immune-relevant genes in the mucus of <i>Labeo rohita</i> , experimentally infected with <i>Argulus siamensis</i> .	Acta Parasitologica <b>2018</b> ; 63: 125-133.	1.534
13.	Parida S, <b>Mohapatra A</b> , Mohanty J, Sahoo PK	<i>Labeo rohita</i> and <i>Argulus siamensis</i> infection: Host size, local inflammatory reaction and immunity modulate ectoparasite load on fish.	Aquaculture research <b>2018</b> ; 49: 757-766.	2.184
14.	Kar B, <b>Mohapatra A</b> , Mohanty J, Sahoo PK	Evaluation of ribosomal P0 peptide as a vaccine candidate against <i>Argulus siamensis</i> in <i>Labeo rohita</i> .	Open Life Sciences <b>2017</b> ;12: 99-108.	1.311
15.	<b>Mohapatra A</b> , Karan S, Kar B,	Apolipoprotein A-I in <i>Labeo rohita</i> : Cloning and functional	Fish & Shellfish Immunology <b>2016</b> ; 55:717-728.	4.622

	Garg LC, Dixit A, Sahoo PK	characterisation reveals its broad spectrum antimicrobial property, and indicates significant role during ectoparasitic infection.		
16.	Sahoo PK, Swaminathan TR, Abraham TJ, Kumar R, Pattanayak S, <b>Mohapatra A</b> , Rath SS, Patra A, Adikesavalu H, Sood N, Pradhan PK, Das BK, Jayasankar P, Jena JK	Detection of goldfish haematopoietic necrosis herpes virus (Cyprinid herpesvirus 2) with multi-drug resistant <i>Aeromonas hydrophila</i> infection in goldfish: First evidence of any viral disease outbreak in ornamental freshwater aquaculture farms in India.	Acta Tropica <b>2016</b> ; 161:8-17.	3.222
17.	Kar B, Moussa C, <b>Mohapatra A</b> , Mohanty J, Jayasankar P, Sahoo PK	Variation in susceptibility pattern of fish to <i>Argulus siamensis</i> : Does immune response of host play a role?	Veterinary Parasitology <b>2016</b> ; 221:76-83.	2.821
18.	Kar B, <b>Mohapatra A</b> , Mohanty J, Sahoo PK	Transcriptional changes in three immunoglobulin isotypes of rohu, <i>Labeo rohita</i> in response to <i>Argulus siamensis</i> Infection	Fish & Shellfish Immunology <b>2015</b> ; 47:28-33.	4.622
19.	Das S, <b>Mohapatra A</b> , Kar B, Sahoo PK	Molecular characterization of interleukin 15 mRNA from rohu, <i>Labeo rohita</i> (Hamilton): Its prominent role during parasitic infection as indicated from infection Studies	Fish & Shellfish Immunology <b>2015</b> ; 43:25-35.	4.622
20.	Das S, <b>Mohapatra A</b> , Sahoo PK	Expression analysis of heat shock proteins during <i>Aeromonas hydrophila</i> infection in rohu, <i>Labeo rohita</i> with special reference to molecular	Cell Stress & Chaperones <b>2015</b> ; 20:73-84.	3.827

		characterization of Grp78.		
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21.	Das A, <b>Mohapatra A</b> , Sahoo, PK	Cloning and characterization of antimicrobial peptide, hepcidin in medium carp, <i>Puntius sarana</i> .	International Journal of Peptide Research and Therapeutics <b>2015</b> ; 21:139-147.	2.191
22.	Sahoo PK, Kar B, <b>Mohapatra A</b> , Mohanty J	<i>De novo</i> whole transcriptome analysis of the fish louse, <i>Argulus siamensis</i> : First molecular insights into characterization of Toll downstream signalling molecules of crustaceans.	Experimental Parasitology <b>2013</b> ; 135:629-641.	2.132
<i>Review paper:</i>				
1	Sahoo PK, <b>Mohapatra A</b> , Jena JK	Apolipoproteins in fish: From lipid transport to innate immunity.	Indian Journal of Animal Sciences <b>2017</b> ; 87: 4-15.	0.294
<i>Book Chapter:</i>				
1.	Mishra S, Dash J, <b>Mohapatra A</b> , Sethi M, Senapati S	Probiotics based anticancer immunity in Pancreatic cancer	‘Frontiers in cancer immunology’- Bentham Science publishers 2023; 4 : 52-72	
2.	Kar B, <b>Mohapatra A</b> , Parida S, Sahoo PK	Vaccines for Parasitic Diseases of Fish	Fish immune system and vaccines- Springer Nature <b>2022</b> ; ISBN : 978-981-19-1267-2	

## SEMINAR ATTENDED

1. Presented poster “*Argulus siamensis* uses host Apolipoprotein A-I machinery for its survival:A proof of concept validated through SiRNA tool” at 3<sup>rd</sup> International Symposium on Genomics in Aquaculture from 21-01-2020 to 23-01-2020, organized by, ICAR-CIFA.
2. Presented poster entitled “Candidate reference gene selection and validation for RT-qPCR analysis in *Argulus siamensis* under different patho-physiological states for developing drug targets” at XIV Agricultural Science Congress from: 21-02-2019 to 23-02-2019, organized by ICAR, IARI.
3. Presented paper entitled “Molecular cloning, structural and functional characterization of hepcidin in Indian major carp, *Labeo rohita*” at 11th IFAF from: 21-11-2017 to 24-11-2017, organized by Asian Fisheries Society (Indian Branch).
4. Presented poster “*Argulus* vaccine candidates: from mining genomic information for vaccine target screening to In vitro and In vivo trials using a novel hidden antigen” at 2<sup>nd</sup>

International Symposium on Genomics in Aquaculture from 28-01-2016 to 30-01-2016, organized by, ICAR-CIFA.

5. Presented poster “Cloning, sequencing and in vitro characterization of Apolipoprotein A1 in *Labeo rohita*” at 10th Indian Fisheries and Aquaculture from 12-11-2014 to 15-11-2014, organized by Asian Fisheries Society (Indian Branch).
6. Presented poster entitled “Cloning, sequencing and expression analysis of hepcidin gene of *Labeo rohita* to *Aeromonas hydrophila* infection” at Eight symposium on Diseases In Asian Aquaculture from 21-11-2011 to 25-11-2011, organized by Asian Fisheries Society.

## RESEARCH PROJECTS OF THE DEPARTMENT (last five years)

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)

<b>6.</b>	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
<b>7.</b>	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
<b>8.</b>	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
<b>9.</b>	Evaluation of anti-inflammatory and immunomodulatory potential of red alga <i>Gracilaria verrucosa</i>	WB-OHEPEE	Rs. 1.5 lakh	2022-2023 (1 year)	Dr. Jyotsnarani Pradhan
<b>10.</b>	Assessment of immunomodulatory impact of arsenic album 30c through cell culture bases study	AYUSH, Govt. of India	Rs. 2.6 lakh	2022-2023 (1 year)	Prof. J. Dandapat (PI) Dr. Jyotsnarani Pradhan (Co- PI)



<b>11.</b>	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
<b>12.</b>	Development of a gold nanoparticle-based enhanced lateral flow assay (LFA) for rapid in-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)
<b>13</b>	Understanding the molecular mechanism of Anti-thyroid drug PTU-induced redox imbalance and epigenetic alteration	DST, Govt. of Odisha	Rs. 30lakh	2024-2027 (3 years)	Prof. J. Dandapat (PI) Dr. Jyotsnarani Pradhan (Co-PI) Dr. Timir Tripathy, NEHU-shilong (Co-PI) Dr. Aditya Padhi, IIT-BHU (Co-PI)

## INFRASTRUCTURE AND LEARNING RESOURCES

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  
SMART 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. *Beside the departmental facilities, the students and scholars of department of biotechnology have access to facilities available in Central Instrumentation Facilities / Centre of Excellences where several high end equipment /facilities such as confocal , Raman spectroscopy, high performance computational workstation.*

### 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



UV VISIBLE SPECTROPHOTOMETER



UV VISIBLE SPECTROPHOTOMETER WITH MICRO VOLUME CAPACITY



FLUORESCENCE SPECTROPHOTOMETER



HIGH PERFORMANCE LIQUID CHROMATOGRAPHY



ELECTROPHORESIS UNIT



REAL TIME PCR



FLUORESCENCE MICROSCOPE WORK STATION



WATER PURIFICATION SYSTEM



GEL DOCUMENTATION SYSTEM



THERMAL CYCLER



HIGH SPEED COOLING CENTRIFUGE

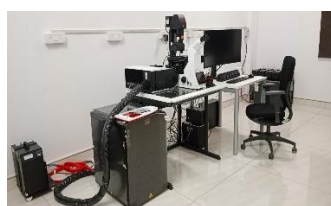


BINOCULAR RESEARCH MICROSCOPE WITH IMAGE CAPTURE FACILITY



LAMINAR HOOD

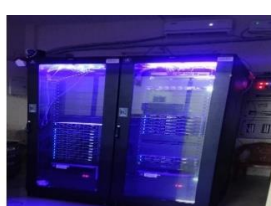
### CIF/COE FACILITIES



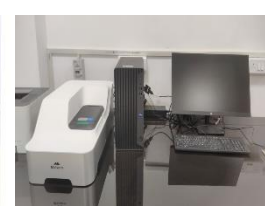
Confocal Microscope



Raman Spectroscope



High Performance Computing Facility



Zeta Analyser

## 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 samplings on Teachers' day and Van Mahotsav



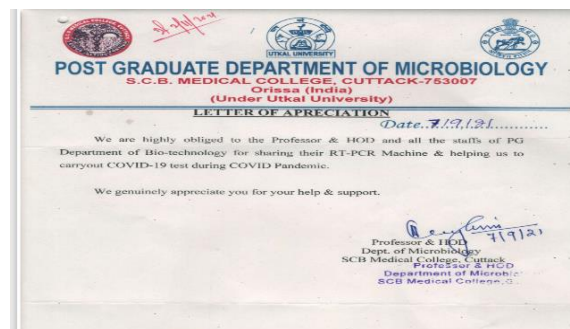
### Blood Donation Camp



### 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**

<b>Sl. No.</b>	<b>Category</b>	<b>Event</b>	<b>From</b>	<b>To</b>
1	UGC Sponsored Skill Development Workshop	Basic Methods in Proteomics	28.03.2017	29.03.2017
2	Events	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

SI No.	Resource Persons	Topic	Date
1.	Prof.Pramod C. Rath, School of Life Science , JNU, New Delhi	Stem Cells	07/12/2016
2.	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
3.	Prof.GBN Chainy, Honorary visiting Professor	DNA: Past, Present and Future	25/04/2017
4.	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
5.	Dr.Ajay Parida , Director, Institute of LifeSciences, Bhubaneswar	Science of Societal Benefits	17/08/2017
6.	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
7.	Dr. Surya Narayan Rath Asst.professor, Department of Bioinformatics, OUAT, Bhubaneswar	Molecular dynamic simulation: A tool to study Dynamics of Macromolecules.	31/01/2018
8.	Dr. Tirumala Kumar Chowdary Reader -F, school of Biological sciences, NISER, Bhubaneswar.	Research talk	28/02/2018
9.	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 mechansimAmyotropic 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 <sup>st</sup> 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 Season 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	Protien 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	Orientation Programme	28/09/2022

	Biotec, New Delhi		
39.	Ms. Smita Das Founder and Managing Director of Shresth Industries.	Orientation Programme	17/10/2022
40.	Prof. S. P. Adhikary Former V. C. FM University	Biofertilizers for soil quality maintenance & productivity	05/12/2022
41.	Prof. Ramesh Sharma Former Professor, NEHU, Shillong, Meghalaya	Why do we age and how to have healthy aging?	19/12/2022
42.	Dr. Bishnu Nayak Senior Director & Site Head-Target Biology & Translational Research, Neologicsbio, Diego, CA	Taming Lupus- A small molecule approach	21/12/2022
43.	Dr. Nibedita Lenka Scientist-F, NCCS, Pune	Stem cell biology	22/12/2022
44.	Dr. Sujay Singh Director, Imgenex India Pvt. Ltd.	Prospects of industrial sector in Biotechnology	24/01/2023
45.	Dr. Praful Singru Associate Professor, School of Biological Sciences, NISER, Bhubaneswar	Importance of animal models in understanding the brain and behaviour	04/02/2023
46.	Dr. Chandan Goswami Associate Professor, School of Biological Sciences, NISER, Bhubaneswar	Ion channel in health and diseases	23/02/2023
47.	Dr. Kartikeyan Vasudevan Senior Scientist, CSIR-Center for Cellular and Molecular Biology	Career opportunities at CSIR-CCMB	24/02/2023
48.	Dr. Satyabrata Das, Assistant Professor, Research Associate at Lillehie Heart Institute, University of Minnesota, USA	Pioneer Transcription Factors & Engineered Humanized Organs in Pigs	11/03/2023
49.	Dr. Sourav Chowdhury, NIH- Senior Post Doctoral Research fellow, Harvard University, USA	Voice of Alumni	26/04/2023
50.	Dr. Soma Chattopadhyay Scientist F, Institute of Life Science	Development of antiviral molecules to combat emerging viruses	29/04/2023
51.	Dr. Aditya Kumar Padhi Assisant Professor, School of Biochemical Engineering IIT-BHU, Varanasi	Designing proteins for tomorrow: Insights into COVID-19 and Beyond	25/05/2023
52.	Dr. Dileep Vasudevan Scientist E, Institute of Life Science	A structural journey with plant nucleoplasmins	07/06/2023
53.	Dr. Jibanjyoti Panda Scientist –E, Institute of Nanoscience and Technology, Mohali	Peptide/Aminoacid nanoparticles in the delhivery of Brain therapeutics (Voice of Alumni)	03/07/2023



54.	Dr. S.K. Rath Chief Scientist & Professor at Toxicology and experimental medicine, CSIR-CDRI, Lucknow	Phytopharmaceuticals opportunities and challenges	26/07/2023
55.	Prof Alok Srivastava Professor, Department of Chemistry and Centre for Advance Studies, Panjab University	Biomedical application of nuclear science	27/07/2023
56.	Dr. Timir Tripathi Department of Biochemistry, NEHU, Shillong	Understanding the nature of Protein	19/08/2023
57.	Dr. Rajeeb Swain Scientist E, Institute of Life Science	Developmental studies in Zebra fish	07/09/2023
58.	Dr. Soma Chattopadhyay Scientist F, Institute of Life Science	Mechanism of viral infection	09/09/2023
59.	Prof. C. C. Rath Chairman, P.G. Council, Ramadevi Women's University	Prospects of Biotechnology	12/09/2023
60.	Dr. Durg Vijai Singh Professor and Head & Director, RDC, Department of Biotechnology, School of Earth, Biological and Environmental Sciences, Central University of South Bihar, Gaya	Interactive seminar	15.09.23
61.	Prof. Palak Aich School of Biological Sciences, NISER, Bhubaneswar	Interactive seminar	18.09.23
62.	Dr. Debashis Dash Director of ILS, Bhubaneswar	Interactive seminar	21.09.23
63.	Dr. Sashikanta Dash Deputy Director, Department of Science and Technology, Govt of Odisha	Interactive seminar	23.09.23
64.	Dr. Gulam Syed Scientist E at Institute Of Life Science, Bhubaneswar	Interactive seminar	12.10.23
65.	Prof. P.K Pati Head of the Department, Guru Nanak Dev University, Amritsar	Biotechnology is the pursuit of Human Health and Bio-Economy	2.12.23
66.	Mr. Paresh P Rana Institute of Cell Biology, University of Edinberg	Uncovering the mechanisms of antifungal resistant epimutation stability	08.02.24
67.	Prof. Suvendra Kumar Ray	Transition and Transversion base Substitution mutations in Genomes	21.03.24

	Department of Molecular Biology, Tezpur University, Assam		
68.	Mr. Vijay Mandal Clinical Trial Manager at ICON Clinical Pvt. Ltd. Mrs. Monisha G R Associate Director, Quality Assurance, IQVIA, Bangalore	Voice of Alumni	19.04.24
69.	Dr. Debabrata Biswas Scientist-C, Institute of Life Science, Bhubaneswar	Interactive seminar	24.04.24
70.	Dr. Rajeeb K Swain Scientist-F, Institute of Life Science, Bhubaneswar	Drosophila Embryogenesis	30.04.2024
71.	Dr. Gunjan Mandal Scientist-B, Institute of Life Science, Bhubaneswar	Interactive seminar	08.05.24
72.	Mr. Kapilas Adabar Senior Project Manager, Makerghat	Demystifying Startups through entrepreneurial upskilling: Sensitization and Baseline Assessment	14.05.24

## ACHIEVEMENTS OF STUDENTS AND RESEARCH SCHOLARS

### DEPT OF BIOTECHNOLOGY, UTKAL UNIVERSITY

#### ACHIEVEMENTS OF M.Sc. STUDENTS IN NATIONAL LEVEL

##### ENTRANCE EXAMINATIONS (Since 2016..)

Sl.no	Name of the students (2023-2025 batch)	NET/GATE
1.	Sanjeeb Sahoo	GATE BT &XL
2.	Kumar Vaibhav	GATE BT &XL
3.	Somnath Ghosal	GATE BT &XL
4.	Samikshya Swain	GATE XL
5.	Ananya Priyadarsini	GATE BT &XL
6.	Tanni Dutta	GATE XL
7.	Geetanjali Nath	GATE XL

Sl.no	Name of the students (2022-24 batch)	NET/GATE/ M- Tech
1.	Soumen Gayen	GATE-XL/ CSIR-NET JRF
2.	Shaily Verma	GATE BT&XL, DBT-JRF
3.	Sasweta Samataray	GATE BT
4.	Swarnali Panda	GATE BT
5.	Ankita Sahoo	GATE BT &XL, DBT-JRF

6.	Deepika Priyadarshini Naik	GATE BT /CSIR-NET JRF
7.	Komal Kumari	GATE XL/, CSIR NET-LS, DBT-Cat-II
8.	Manas Behera	GATE BT &XL
9.	Sushmita Chakraborty	GATE BT &XL
10.	Ipsarani Satapathy	GATE BT
11.	Arun Tirkey	GATE BT, M- Tech IIT ROORKEE,
12.	Sushree Saloni Sahoo	GATE XL, M-Tech IIT KHARAGPUR,
13.	Sushree Arpita Kumari Gupta	GATE BT &XL
14.	Deepakshi Sahoo	GATE BT &XL
15.	Lopamudra Sethi	GATE XL
16.	Snehasish Patra	GATE XL

<b>BATCH 2021-23</b>			
<b>Sl. No</b>	<b>Name of the Research Scholar</b>	<b>Nature of Achievement</b>	<b>Year</b>
1	Rudra Pratap Singh	GATE	2023
2	Tamoghna Chakraborty	GATE, CSIR NET- JRF	2023
3	Debalaya Mukherjee	GATE	2023
4	Smruti Swarupa Mishra	GATE	2023
5	Soumya Ranjan	GATE <b>Selected for Ph.D. in University of Minnesota ,USA</b>	2023
6	Satyanshi Behera	GATE XL	2024
7	Lachhantini Sahu	GATE	2024

<b>BATCH 2020-22</b>			
1.	Monalisha Padhiary	GATE, DBT (CATEGORY II), DST- INSPIRE	2023
2.	Saumyashree Das	GATE	2023
<b>3.</b>	<b>Abinash Jena</b>	<b>GATE-XL (AIR-8) GATE-BT (AIR-79)</b>	<b>2023</b>
4.	Shivam Kesarwani	GATE, TIFR, DBT JRF	2023
5.	Santosh Kumar Sethi	GATE, CSIR NET- JRF	2022
6.	Jagatjita Mallick	GATE, CSIR NET-LS	2022
7.	Bhabani Mishra	GATE	2022
8.	Anshuman Panda	GATE	2022
9.	S. K. Rameej Raja	GATE, CSIR NET- JRF	2022

10.	Abhisek Behera	GATE	2022
11.	D. Nishant Kumar	GATE	2022
12.	Pooja S. Gundure	GATE	2022
13.	Jashaswi Priyadarshini Jena	DBT JRF	2023
14.	Diptesh Chakroborty	GATE	2024
<b>BATCH (2019-2021)</b>			
1.	Daamini Pattnaik	GATE	2021
2.	Palak Khandelwal	GATE	2021
3.	Pritiusha Pradhan	GATE/ TIFR	2021
4.	Raj Kumar Samata	GATE/ DBT-JRF	2021
<b>BATCH (2018-2020)</b>			
1.	Rima Samanta	GATE	2020
2.	Namrata Kanungo	GATE	
3.	Niladri Halder	NET-JRF, DBT-JRF	2020
4.	Sayani Das	DBT-JRF, NET-LS, GATE	2020
5.	Bristy Ganguli	GATE/ TIFR/ MPhil	2020
6.	Nishi PragyanNaik	GATE, NET-JRF	2021
7.	Vinayak Nayak	GATE/ ICAR-JRF	2020
8.	Rajashree Nayak	GATE	2021
9.	Madhumati Majhi	ICAR-JRF	2020
10.	Sugyani Priyadarshini	GATE	2020
<b>BATCH (2017-2019)</b>			
1.	SaheliSaha	NET-LS, GATE	2019
2.	Susmita Ghosh	NET-LS, GATE	2019
3.	Swagatika Behera	GATE	2019
4.	Ananya Ghosh	GATE	2019
5.	Subhasis Mahari	CSIR- JRF	2018
6.	Deepak Jha	CSIR-JRF GATE	2019
7.	Madhurima Mandal	NET-LS, GATE	2019
8.	Supriya Samal	CSIR-JRF, GATE	2019
9.	Preety Barla	NET-JRF	2019
<b>BATCH- (2016-2018)</b>			
1.	Monalisha Ojha	CSIR-JRF, GATE	2018
2.	Priti Ranjan Sahoo	CSIR-JRF, GATE	2018
3.	Ankita Pal	GATE	2018
4.	Soumya Ranjan Dash	GATE	2019
5.	Bibhu Ranjan Khatua	CSIR-JRF	2018
6.	Swagatika Parida	GATE	2021
7.	Shaista Shabbi	CSIR-NET-LS	2024

**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
8.	Poonam Das	Ph.D.	Best Poster Award in Biological section in Odisha Research Conclave 2023 jointly organized by Odisha higher Education council and Sambalpur University	2023
9.	Poonam Das	Ph.D.	Got 1 <sup>st</sup> prize in oral presentation at National Seminar on “Ecological Sustainability and Natural Product Development” Organized by Department of Biotechnology MSCB University , Baripada, Odisha	2023
10	Poonam Das	Ph.D.	Got 3rd Prize at International conference on TIARST organized by Dept. of Zoology, Utkal University, Odisha	2023
11	Deepakshi Sahu	M.Sc.	Second Competition in Rangoli Competition at Utkal Glory Fest 2023, Utkal University	2023
12	Nitish Kumar Bhol	Ph.D.	Got 3 <sup>rd</sup> prize in poster presentation at National Seminar on “Ecological Sustainability and Natural Product Development” Organized by Department of Biotechnology MSCB University, Baripada, Odisha	2023
13	Dr. Suvasmita Rath	Post-Doctorate fellow	Received <b>best oral presentation award</b> at international conference on “Technological Innovations in Animal Science Research and Social Transformation” held at Department of Zoology, Utkal University, Bhubaneswar, Odisha from 24 <sup>th</sup> -26 <sup>th</sup> February, 2023	2023
14	Rout George Kerry	Ph.D.	Got 2 <sup>nd</sup> Prize in Poster presentation at International Conference on	2022

			Biotechnology and Bioinformatics and Challenges, Maharaja Sriram Chandra Bhanja Deo University, Odisha	
15	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
16	Dr. Suvasmita Rath	Post-Doctorate fellow	Got 1 <sup>st</sup> 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 <sup>st</sup> May, 2022	2022
17	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
18	Poonam Das	Ph.D.	Got 3rd Prize at the Research Scholars' Conclave organized by Utkal University, Odisha.	2021
19	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

## 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 PUBLICATIONS (Since 2016)

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](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  $\alpha$ -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 saho j.\*, saho 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<sup>1\*</sup>, 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 $\beta$  (IL-1 $\beta$ ) 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 Aгаа, Arkajyoti Mukherjee, Deepti Rane, Vasundhara More, Tejaswini Patilc, Ger van Zandbergend, Werner Solbach, Jagneswar Dandapat, Heidi Tackenberg, Mareike Ohms, Arup Sarkarb, Tamas Laskay. *Cytokine*.2018;. <http://doi.org/10.1016/ j.cyto.2018.06.027>
18. Low H<sub>2</sub>O<sub>2</sub> 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 mylitta*: Further evidence of joint effects hypothesis. Smaranika Sahu, Abinash Dutta, Dinesh Kumar Ray, Jyotsnarani Pradhan, Jagneshwar Dandapat, *Comparative Biochemistry and Physiology*, 2018; <http://150.1016/j.cbpb.2018.06.004>.
20. 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 and Nakulananda Mohanty. *Journal of*

*Entomology and Zoology Studies*.2018; E-ISSN: 2320-7078 P-ISSN: 2349-6800, 136-142. <https://www.entomoljournal.com/archives/2018/vol6issue6/PartC/6-5-303-629.pdf>

21. Current advances in nanocarriers for biomedical research and their applications, Artificial Cells, Nanomedicine, and Biotechnology, by George Kerry Rout, Han Seung Shin, Sushanto Gouda, Sabuj Sahoo, Gitishree Das, Leonardo Fernandes Fraceto & Jayanta Kumar Patra, Vol. , June 2018, p1-10, ISSN: 2169-1401 2169-141X <http://10.1080/21691401.2018.1478843>
22. Protective efficacy of crocetin and its nanoformulation against cyclosporineA-mediated toxicity in human embryonic kidney cells (2019). Jyotsnarani Pradhan, Chandana Mohanty, Sanjeeb K. Sahoo, *Life Sciences*, 216, 39-48. <https://doi.org/10.1016/j.lfs.2018.11.027>
23. Curcumin restores hepatic epigenetic changes in propylthiouracil(PTU)Induced hypothyroid male rats: A study on DNMTs, MBDs, GADD45a, C/EBP- $\beta$  and PCNA. Suresh Kumar Bunker, Abinash Dutta, Jyotsnarani Pradhan, Jagneshwar Dandapat, G.B.N. Chainy. *Food and Chemical Toxicology (2019)*.123.<https://doi.org/10.1016/j.fct.2018.10.050>
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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 Collaborations



North-Eastern Hill University, Shillong



Institute of Life Science, Bhubaneswar



Central Council of Research in Homeopathy, New Delhi



National Institute of Science Education and Research



P. G. Department of Biotechnology, Utkal University



Indian Institute of Technology (Banaras Hindu University), Varanasi



Regional Plant Resource Center



Institute of Minerals and Materials Technology, Bhubaneswar

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### Collaborations (International)



University of Maryland, College Park, USA



Utkal University, Department of Biotechnology



Mississippi state university, USA



King Abdulaziz University, Saudi Arabia



Dongguk University, South Korea



Beni-Suef University, Egypt

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

Sl. No	Name	Exams Qualified	Ph.D.	Post-DOC	Currently placed
<b>Batch 2002-2004</b>					
1	Dr. Aseem Mishra	NET-JRF	ICGEB, New Delhi		CEO, Prantae Solutions Private Limited, Bhubaneswar, Odisha
2	Dr. Umakant Subudhi	NET-JRF	Utkal University, Bhubaneswar		Senior Scientist, CSIR-IMMT, Bhubaneswar
3	Dr. Saktikanta Rath	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. Abhisek Kumar		VinobaBhave University, Bihar		Chief Commercial Officer - Sales, Marketing & Operations, Prantae Solution Pvt Ltd, Bhubaneswar, Odisha
7	Gitanjali Rath				
8	Binaya Kumar Thakur				Senior Manager, Clinical Development at Biocon Biologics, Bangaluru, Karnataka
9	Dhananjay Kumar				
<b>Batch 2003-2005</b>					
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. Jiban Jyoti Panda	NET-JRF/DBT/GATE/ICMR	ICGEB, New Delhi		Scientist E, 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			Tahasildar at Nuagaon, Nayagarh, OAS
15	Dr. Meera Kumari	NET-LS	Kansas University, USA		
16	Sulochana Bisoi				
17	Kumari Archana				
18	Alok Kumar Sethi	DBT-JRF			
19	Abhishek	NET/DBT/ICMR/ARS/GATE			
<b>BATCH: 2004-2006</b>					
20	Dr. Sawan Kumar	NET/GATE	IIT Madras,		Deputy Director, Regulatory

			Chennai		Affairs and Quality Assurance, Sea6 Energy Pvt. Ltd. Bangaluru, Karnataka, India
21	Dr. Jay Prakash		BHU, Varanasi	Jamia Milia Islamia University	
22	Vijay Mandal	GATE			Clinical Project Lead, ICON plc Biotechnology Research Dublin, Trivandrum Branch, Kerala
23	Dr. Deepak Kumar	NET/GATE	ILS, Bhubaneswar	University of California School of Medicine and U.C.S.D., U.S.A	Scientist III, Cell and Gene Therapy, R&D, ThermoFisher Scientific, Carlsbad, CA, USA.
24	Dr. Jawed Alam	NET, GATE	NISED, Kolkata	ILS, BBSR	Assistant Professor, AMIT, Bhubaneswar, Odisha
25	Ronita P. Kujur				
26	Anju Kashyap				IP Specialist, C-CAMP
27	A.T. Vivek	GATE			
<b>BATCH: 2005-2007</b>					
28	Dr. Anjan Pradhan	NET/GATE	ILS, Bhubaneswar	Post Doc at Virginia Commonwealth University, USA	Instructor at Virginia Commonwealth University, Richmond, VA, USA
29	Dr. Rajesh kumar Kar	GATE/NET	IIT Bombay	University of Wisconsin- Madison, USA	Associate Research Scientist Yale University
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		Senior Scientist at Citryll b.v. Utrecht, Netherlands
33	Dr. Namita Khanna	NET/GATE	IIT Kharagpur	Microbial Chemistry, Department of Chemistry, Uppsala University, Sweden	Senior Scientist and Cell Free Inputs Group Leader at Nuclera, UK
34	Dr. DeeptiDeepika	NET/GATE	IIT Bombay		
<b>BATCH: 2006-2008</b>					
35	Dr. Sunil Behera	NET-JRF	IMMT, Bhubaneswar	University of Johannesburg, South Africa	Assistant Professor, Department of Bioscience and Bioinformatics, Khallikote University, Berhampur
36	Dr. Arpita Saha	NET_JRF	JNU, New Delhi	The Hebrew University of Jerusalem	Postdoctoral Research Assistant CNIO - Spanish National

					Cancer Research Centre, Madrid, Community of Madrid, Spain
37	Dr. Shashikala Verma,	NET-JRF	JNU, New Delhi	CCMB, Hyderabad	Assistant Professor, at Banaras Hindu University, Varanasi
38	Dr. Saswat K Bal,	NET-JRF	JNU, New Delhi	Postdoctoral Research Fellow at Cleveland Clinic	Scientist MEDGENOME, United States
39	Dr. Saurabh Mishra	NET-JRF	CDFD, Hyderabad	National Institute of Health	Assistant Professor in the Department of Microbiology, Central University Punjab,
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
<b>BATCH: 2007-2009</b>					
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	Co-founder & Managing Director of Databaum (Germany, Switzerland)
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. ManikVij		ICGEB, New Delhi	Post-Doctoral Researcher at Karolinska Institute Stockholm, Sweden	Research Scientist, Rheinfelden (Baden), Baden-Württemberg, Germany
52	Bantu Raghu Ram		Central University,		Patent Officer, Indian Patent

			Hyderabad		Office/Trade Marks Registry/Designs Office, Kolkata
<b>BATCH: 2008-2010</b>					
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	Associate Research Scientist Yale University
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	JamiaMilliaIslamia University, New Delhi		Submission Editor Cureus Journal of Medical Science · Freelance
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		Manager Lupin Pvt Limited. (Research Park), Pune
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
<b>BATCH: 2009-2011</b>					
62	Dr. Poonam Singh	NET/GATE	NII, New Delhi	NII, New Delhi	Project Fellow Desert Medicine Research Centre, Jodhpur, Rajasthan, India
63	Sumit kumar Gautam	NET/JNU/GATE	JNU, New Delhi		Lead Scientist (Head of Research and Development), Clear Meat
64	Dr. Pamchui Muiwo	JNU	JNU, New Delhi	Department of Botany, NEHU, Shillong	
65	Tanmoy Sarkar	NET/GATE	ICGEB, New Delhi		
66	Dr. Chinmay Anand	NET/IISc./GATE	IISc, Bangalore		Research Associate at Indian Institute of Science (IISc) Bengaluru
67	Dr. Govinda Raju		Clinical and Molecular Cancer Medicine, London, United Kingdom		Senior Scientist Episteme Genomics, Hyderabad, Telangana, India
68	Dr. Bhanu Ramya	GATE	IICT, Hyderabad		
<b>BATCH: 2010-2012</b>					
69	Dr. Varun Saha	NET/DBT/GATE	CDFD, Hyderabad		Post-Doctoral Researcher at Goethe-University Frankfurt,

					Germany
70	Dr. Dhakaram Pangeni	NET/DBT/GATE	JNU, New Delhi		Postdoctoral visiting fellow The National Institutes of Health, Durham, North Carolina, United States
71	Dr. Saurabh Chadhury	NET/GATE	IICB, Kolkata	Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138	Department of Chemistry and Chemical Biology, Harvard University, 12 Oxford Street, Cambridge, MA 02138
72	D. Suresh	GATE	National Institute of Bioinformatics, Bangalore		
73	Saurabh Bhanushali				MD of Aquamax Pvt. Ltd
<b>BATCH: 2011-2013</b>					
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(SGPGIMS), Lucknow		
77	Dr. Nidhi Singh Parmar	GATE	BHU, Varanasi		Lecturer Government of Bihar, Patna, Bihar, India
78	Pallavi Shejpal	GATE	NIPER, Mohali		
79	Sadhana Behera	NET/OAS			Orissa Administrative Service
80	Preeti Agrawal		Research Assitant at Ella Foundation, Hyderabad		Junior Scientist Dhiti Omics, Bengaluru, Karnataka, India
<b>BATCH: 2012-2014</b>					
81	Dr. Devbrat Kunvar	NET/DBT/GATE	JNU, New Delhi		Postdoctoral Researcher Indian Institute of Technology, Delhi
82	Dr. Anupam Apoorva	NET/DBT	IIT, Kharagpur		Postdoctoral Researcher University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania, United States
83	Indranil Das		Assam University		
84	Neha Pnadey				Clerk at Central Bank of India, Kanpur
85	Ankita Datey		ILS, Bhubaneswar		

86	Kavya Singh Chouhan				Lecturer at Government college ,Rajnandgaon
87	Devyani Chakrabarty	GATE	Research Fellow Indian Institute of Science (IISc)		Project Manager at TransPerfect, Pune, Maharashtra
88	Soumya Sourav Mohapatra				
<b>BATCH: 2013-2015</b>					
89	Sukanya Pati	NET/DBT	KIIT University, Bhubaneswar		
90	Dr. Neha Jain	NET	NIT, Rourkela		
91	Dr. Soumya Basu		National Forest Research Institute, Dehradun		Assistant Professor, National Institute of Science and Technology (NIST), Berhampur , Odisha
92	Nimisha	JNU	SRF, ICGEB, New Delhi		
93	Sunil Pani	CSIR-NET-AS	KIIT, Bhubaneswar		
<b>BATCH: 2014-2016</b>					
94	Varsha Mohapatra	NET/DBT/GATE	IISc, Bangalore		
95	Ruchi Kumari	DBT	IIT, Delhi		
96	Anurag Singhal	GATE			Quality Specialist at Amazon India, Hyderabad
97	Ishita Basu				Work at Deloitte Consulting US-India Pvt. Ltd. Bangalore
98	Ipshita Shibani				SME at Chegg India, Bhubaneswar
99	Subhashree Das				Assistant Manager, State Bank of India
100	Pratyasha Pratishkya	DBT/GATE			
101	Geetanjali Rajhansa		PhD Scholar at Center for Biotechnology, Siksha "O" Anusandhan (Deemed to be University)		
102	Pratima Hanshda				
<b>BATCH: 2015-2017</b>					
103	Suraj Sharma				Research Associate Kemwell Biopharma Pvt Ltd Bengaluru, Karnataka, India
104	Upasana Pal		Institute of Applied Microbiology, RWTH Aachen University, Germany		
105	Pratikshya Sa	UGC-	Institute of Life		

		JRF/GATE	Sciences Bhubaneswar		
106	Poonam Das	GATE/ NET-AS	Utkal University		
107	Dr. Janmejaya Bag	GATE	NIT, Raurkela	Research Associate at BARC, Mumbai	
108	Sanju Salima Ekka	GATE	Sambalpur University		
109	Divyani Martha	GATE			
110	Gunchae Shadab				
<b>BATCH:2016-2018</b>					
111	Monalisha Ojha	CSIR-JRF, GATE	NIT, Rourkela		
112	PritiRanjanSahoo	CSIR-JRF, GATE	IISER, Bhopal		
113	Shaista Shabbi	CSIR-NET-AS	Shiv Nadar University, Delhi		
114	Ankita Pal	GATE			Associate Centralized Monitor IQVIA, RDS Bangalore Location
115	Soumya Ranjan Dash	CSIR-JRF, GATE	KIIT University, Bhubaneswar		
116	Bibhu Ranjan Khatua	CSIR-JRF			
117	Sharada Hembram				
118	Swagatika Parida	GATE			
119	Kiran Samal				
120	Annu Priya				
<b>BATCH: 2017-2019</b>					
121	Saheli Saha	NET-LS, GATE	IISc, Bangalore		
122	Susmita Ghosh	NET-LS, GATE	<i>Leibniz- InstitutfürAnalytisc heWissenschaften, Germany</i>		
123	Swagatika Behera	GATE	M.Tech. at IICT, Mumbai		Lupin Biotech, Bangalore
124	Ananya Ghosh	GATE			Senior Research Associate at MedGenome Labs Ltd, Bangalore
125	Singdha Sarita Baliarsingh				OFS
126	Subhasis Mahari	CSIR- JRF	NIAB, Hyderabad		Scientist B, State pollution control Board. Bhubaneswar, Odisha
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,	NISER,		



		GATE	Bhubaneswar		
131	Anwasha Panda				
132	Preety Barla	NET-JRF	ILS, Bhubaneswar		
133	Sonali Mohapatra				
134	Ranjeeta Paleya	EpisourceIndPvt Ltd			Medical coder Optum, Mumbai, Maharashtra, India
<b>BATCH: 2018-2020</b>					
135	Rima Samanta	GATE	Research Scholar, L V Prasad Eye Institute, Hyderabad		
136	Namrata Kanungo	GATE, DST- Inspire	Utkal University		
137	Niladri Halder	NET-JRF, DBT- JRF	JRF at Agharkar Research Institute, Pune		
138	Sayani Das	DBT-JRF	Institute of Life Sciences, Bhubaneswar		
139	Bristy Ganguli	GATE/ TIFR/ MPhil	JRF, CIFA, Bhubaneswar		
140	Nishi Pragyan Naik	GATE, NET- JRF	Institute of Life Sciences, Bhubaneswar		
141	Vinayak Nayak	GATE/ ICAR- JRF	JRF, IIT- Hyderabad		
142	Rajashree Nayak	GATE			
143	Madhumati Majhi	ICAR-JRF	Ph.D. at Fakir Mohan University Balasore Odisha		
144	Sugyani Priyadarshini	GATE			
145	Deeptimayee Dhal				Pursuing Advance program in Clinical Research & Management
146	Nibedita Murmu				
147	Subhashree Priyadarshini Sahoo				Apprentice trainee Bharat Biotech Pvt Ltd., Bhubaneswar
<b>BATCH: 2019-2021</b>					
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				
<b>BATCH: 2020-2022</b>					
160	Abhisek Behera	GATE	Research Assistant at AIIMS Bibi Nagar Hyderabad		
161	Anshuman Panda	GATE			M.Tech at Pondicherry University
162	Abinash K Jena	GATE-XL (AIR-08) GATE-BT (AIR-79)	Ph.D. Indian Institute of Technology, Jodhpur		
163	Ashutosh Parida	GATE			
164	Diptesh Chakraborty	GATE	Research fellow at Department of Polymer Science and technology University of Kolkata		
165	D Nishant Kumar	GATE			District Auditor Khorda
166	Bhikari Katria				
167	Santosh K Sethy	GATE, CSIR 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	Ph. D.National Institute of Animal Biotechnology, Hyderabad		
171	SK Rameej Raja	GATE, CSIR NET-JRF	Ph.D. IIT Indore		
172	Malaya K Bhoi				
173	Gourav Naik				
174	Monalisha Padhiary	GATE, DST-INSPIRE, CSIR-NET JRF DBT CAT-2			
175	Pooja Gundure	GATE			Technical assistant, Food Corporation of India, Mumbai

176	Ankita Sharma				
177	Sayantani Bhattacharya				Project Program Coordinator AM Educare Pvt Ltd Kolkata, West Bengal, India
178	Soumyashree Dash				
179	Swarnalata Pradhan				Inspector of Cooperative Societies, Boudh, Odisha (Odisha Staff Selection Commission)
180	Manisha Das				
181	Bhabani Mishra	GATE	Research Scholar. at NRRI, Cuttack, Odisha		
182	Jagatjita Mallick	CSIR NET-LS, GATE			
183	Nibha Nijjyot				
184	Bilasini Hanhaga				
185	Jashaswi Priyadarshini Jena	DBT-JRF	Ph.D. National Institute of Animal Biotechnology, Hyderabad		
<b>BATCH: 2021-2023</b>					
186	Nishant Lankavalasa		Ph.D, NII New Delhi		
187	Gyanaranjan Guru				
188	Saumya Ranjan	GATE	Department of Medicine, University of Minnesota, MN		
189	Aparna Das				
190	Rashmita Priyadarshini				
191	Anjum Akhtar				
192	Rajkishore Nayak				
193	Tanmay Sundaray				
194	Lacchantin Sahu	GATE-XL			
195	Pooja Yadav				
196	Rudra Pratap Singh	GATE			Assistant Teacher Science, Swami Atmanand Govt. English Medium School. Titurdih, Durg (Staff selection Board, Bihar)
197	Tamoghna Chakraborty	GATE, CSIR- NET-JRF	Ph.D. at IICB Kolkata		
198	Bhubaneshwari Mallick				
199	Shrusti Rout		Technical Assistant at Quocent ,Infosys Bhubaneswar		
200	Satyanshi Behera	GATE XL			
201	Binayak Chanda				Teacher at Kendriya Vidyalaya, Shillong

# 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

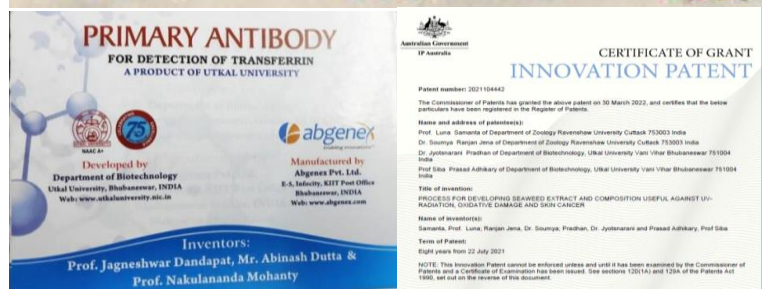
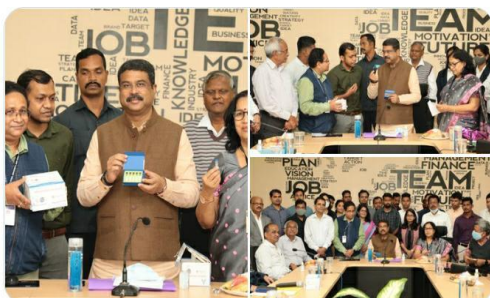


**Impact Factor Range: 2.7-8.4**

## 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 the upliftment of society and the scientific community.
- ❖ Bio-bank facilities for the promotion of research for underprivileged undergraduate colleges.

## PHOTO GALLERY

