

## BIODATA

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### TEACHING EXPERINCE:

**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.

### RESEARCH EXPERIENCE:

**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*”)

### EDUCATION:

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

## **MAJOR ACHIEVEMENTS / FELLOWSHIPS/ AWARDS:**

- 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

## **PATENTS:**

### **1. Australian Innovative Patent number: 2021104442;**

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

Name and address of patentee(s):

Prof. Luna Samanta of Department of Zoology Ravenshaw University Cuttack 753003, Odisha

Dr. Soumya Ranjan Jena of Department of Zoology Ravenshaw University Cuttack 753003, Odisha

Dr. Jyotsnarani Pradhan of Department of Biotechnology, Utkal University Vani Vihar Bhubaneswar 751004 India

Prof Siba Prasad Adhikary of Department of Biotechnology, Utkal University Vani Vihar Bhubaneswar 751004 India

Date of Filing: 22/07/2021

Grant date: 30.03.2022

### **2. Indian Patent Number: 202131031982**

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

Name and address of patentee(s):

Prof. Luna Samanta of Department of Zoology Ravenshaw University Cuttack 75300 India

Dr. Soumya Ranjan Jena of Department of Zoology Ravenshaw University Cuttack 753003 India

Dr. Jyotsnarani Pradhan of Department of Biotechnology, Utkal University Vani Vihar Bhubaneswar 751004 India

Prof Siba Prasad Adhikary of Department of Biotechnology, Utkal University Vani Vihar Bhubaneswar 751004 India

Date of Filing: 15/07/2021

Publication date: 25/11/2022

## **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)

#### **REVIEWER/ EDITORIAL BOARD:**

- Reviewer in Frontiers in Pharmacology

#### **RESEARCH PAPERS/ REVIEWS:**

- Jema JP, Pradhan J, Chainy GBN, Hati AK, Nayak D, Kausik, S, Dandapat J. Covid 19 Cases and Co-Morbidities: Complementary and Alternative Medicinal Systems (CAM) For Integrated Management of the Pandemic. **Journal of Herbal Medicine**. 23 August 2023, 100745. <https://doi.org/10.1016/j.hermed.2023.100745>.
- 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:

- 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.
- 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.
- 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 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.
- 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.
- 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.

- 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 **“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.
- 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 **“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.

#### **WORKSHOP ATTENDED:**

- 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 22<sup>nd</sup> – 25<sup>th</sup>, 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.

#### **ONGOING/COMPLETED PROJECTS:**

- Project entitled “Modified assay procedure for the estimation of hydrogen peroxide in Biological samples using microwell reader”, funded by Utkal University research grant (PI) (2017-2019) (Completed)
- 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) (Completed)
- Project entitled “Isolation, characterization and screening of bioactive compounds with UV protective and antioxidant potential from the Red alga, *Gracilaria verrucosa* of Chilika lake” funded by Odisha University Research and Innovation Incentivisation Plan (OURIIP) Seed Grant, Odisha State Higher Education Council, Govt. of Odisha (PI)(2020-2022) (Completed)
- Project entitled “Efficacy of homoeopathic medicines (30 c) on propylthiouracil (PTU)-induced hypothyroid rat” funded by AYUSH, Govt of India (Co-PI) (2019-2023) (On going)
- Project entitled “Evaluation of anti-inflammatory and Immunomodulatory potential of red alga *Gracilaria verrucosa*” funded by WB-OHEPEE Program Utkal University, Odisha, (PI) (2022-2023) (on going)
- Project entitled “Signature of redox regulatory proteins, transcription factors and Biological clock genes in hypothyroid rat: impact of Time Restricted Feeding (TRF) and curcumin” funded by DST. Govt. of Odisha. (PI)(2022-2025) (On going)
- Collaborative Research Project Grant in Biotechnology, “Understanding the molecular mechanism of anti thyroid drug (propylthiouracil)-induced redox imbalance and epigenetic alteration” funded by DST Govt. of Odisha, (Co-PI) (2023-2026)

#### **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.

**Project Fellow:02**

- Deepak Pradhan, Project fellow, Project title: Signature of redox regulatory proteins, transcription factors and Biological clock genes in hypothyroid rat: impact of time-restricted feeding (TRF) and curcumin
- Asmita Priyadarshini, Project Fellow, Project title: Evaluation of anti-inflammatory and immunomodulatory potential of red alga *Gracilaria verrucosa*
- **M.Sc. Project/Dissertation; 25Nos**
- **Summer Training: 05 Nos**