SUJATA KUMARI
Research Associate
Indian Institute of Technology, Powai
Mumbai, India

Objective

To be part of a professionally managed organization that provides the environment and challenge to make the best use of my knowledge and skills; provides opportunities for acquiring new skills and grow professionally.

EDUCATION

June 2021 **Ph. D. Biotechnology**

Institute: DBT-ICT Centre for Energy Biosciences,
Institute of Chemical Technology Mumbai, India
Thesis: Microalgal chloroplast engineering to produce high value compounds
Supervisor: Dr. Gunjan Prakash, Associate Professor, ICT, Mumbai.

July 2011 **Degree: M. Sc. Molecular Biology and Biotechnology** (89.6 %)
Institute: Indian Agricultural Research Institute, New Delhi, India
Thesis: "Development of a plant transformation vector for host mediated delivery of siRNA molecules targeted to aphid specific genes"
Specialization-Molecular Biology and Biotechnology

June 2009 **Degree: B. Sc. Ag. Hons.** (86.7 %) Gold medalist.
Institute: Uttar Banga Krishi Viswavidyalaya, West Bengal, India

Research Experience

Genetic modification of algae for improving various traits

- Development of tools for chloroplast engineering of *Asterarcys* sp.
- Utilizing a novel regulatory protein for the production of carotenoids in *C. reinhardtii*

- Chloroplast transformation of *C. reinhardtii* for the production of Antimicrobial Peptides

Molecular genetics of model Yeast *Saccharomyces cerevisiae*

Study of the peptidogycan hydrolysis and its role in cell division of *E. coli*

Publications

Published

1) **Kumari, S.**, Vira, C., Lali, A.M. and Prakash, G., 2020. Heterologous expression of a mutant *Orange* gene from *Brassica oleracea* increases carotenoids and induces phenotypic changes in the microalga *Chlamydomonas reinhardtii*. *Algal Research*, *47*, p.101871.

2) **Kumari, S.,** Nesamma, A.A., Lali, A.M., Jutur, P.P. and Prakash, G., 2020. The chloroplast genome of a resilient chlorophycean microalga *Asterarcys* sp. *Algal Research*, *49*, p.101952.

3) Pawar, P.R., Velani, S., **Kumari, S.**, Lali, A.M. and Prakash, G., 2021. Isolation and optimization of a novel thraustochytrid strain for DHA rich and astaxanthin comprising biomass as aquafeed supplement. *3 Biotech*, *11*, 71.

4) **Kumari, S.**, Lali, A.M. and Prakash, G., 2019. Chloroplast genome sequence of *Asterarcys* sp. NCBI accession number MK995333.

5) **Kumari, S.** and Prakash, G., 2019. *Aurantiochytrium limacinum* isolate ceb1 internal transcribed spacer 2, partial sequence. NCBI Accession number MN046792.

Communicated

1) **Kumari, S.**, Lali, A.M. and Prakash, G., 2022. Development of chloroplast engineering tools for *Asterarcys* sp: a resilient scenedesmaceae microalga. *Algal Research.*
2) Jackson H. O., Taunt H.N., Mordaka P.M., **Kumari S.**, Smith A.G., Purton S., 2022. CpPosNeg: a positive-negative selection strategy allowing multiple cycles of marker-free engineering of the chloroplast genome. *Biotechnology Journal*.

Patents

1) Das, G., Dasgupta, S., Prasad, V., Vijayakumar, V., Deore, P., Kaliyamoorthy, K. and **Kumari, S.**, Reliance Industries Ltd, 2018. *Method for increasing lipid content in microorganisms and modified microorganisms therefrom*. U.S. Patent 10,059,968.

2) Das, G., Dasgupta, S., Prasad, V., Vijayakumar, V., Deore, P., Kaliyamoorthy, K. and **Kumari, S.**, Reliance Industries Ltd, 2019. *Method for increasing the biomass synthesis capacity of a photosynthetic microorganism*. U.S. Patent 10,457,964.

Symposia/Conferences/Workshops

1) Advances in Algal Biotechnology held on 21st Nov 2015 at Indian Institute of Technology, Bombay, India.
2) Current Trends in Bioinformatics and Genome Analysis held from 15th to 17th Feb 2018, at Birla Institute of Scientific Research, Jaipur, India.
3) Flow Cytometry Workshop held from 21st to 23rd Feb, 2019, at Venture Center, NCL, Pune, India.
4) A Biotechnology Conclave: New Horizons in biotechnology held on 13th March 2019 at Institute of Chemical Technology, Mumbai, India. (Won best poster award).
5) International Conference on "Plant-Microbe Interaction and their implication in Agriculture" held from 16-18 Nov 2020 at National Institute of Technology, Rourkela, India. (Won award for best oral presentation).

Professional Experience

Research

1) Employer: Centre for Cellular and Molecular Biology, Hyderabad.
   Position: Ph.D. (CSIR-JRF)
   Work Experience: 2 years
   Functional characterization of proteins involved in peptidoglycan metabolism in *E. coli*

2) Employer: Reliance Industries Limited, Mumbai.
   Position: Research officer/Executive
   Work Experience: 1 year 3 months
   Nuclear expression of genes related to lipid and gene expression pathway in *Chlorella* sp. and *Synechococcus elongates* PCC 7942

3) Employer: IIT Bombay, Powai.
   Position: Research Associate
   Work Experience: Present
   Understanding the role of kinetochore in the 3D organization of genome in model yeast *Saccharomyces cerevisiae*.

Teaching

Experience in teaching microbiology to undergraduate students (B.Tech) while pursuing PhD.

Instrumentation Skills

- UV-Vis Spectrophotometer (Perkin Elmer, Shimadzu-1700 series)
- HPLC (Agilent 1200 Series with Chemstation and EZChrom Software, Shimadzu with LC Solutions)
- Apotome microscope (Zeiss)
- Ultra centrifuge
- Gene gun/ He-PDS1000
- Electroporator
- Flow Cytometry
- Confocal Microscope

Techniques known

Analytical techniques:-

- SDS PAGE
- Western Blot
- Peptidoglycan isolation
- Agarose gel electrophoresis
- PCR (including RT-PCR)
- cDNA library preparation
- Antibody production
- Co-immunoprecipitation
- Plant tissue culture
- Particle bombardment
- Proteomics techniques: MALDI-TOF, Protein microarrays, 2D-DIGE, etc.
- Molecular Biology techniques

AWARDS AND HONORS

- Newton Bhabha Fellow (2019)
- Qualified CSIR-JRF in Life Sciences June 2014: (AIR: 54)
- Qualified CSIR-UGC NET/ JRF in Life Sciences thrice, Dec 2009, June 2010, Dec 2010 (AIR: 24)
- Graduate Aptitude Test in Engineering (GATE) in Life Sciences 2006 with rank of 26 out of 9999
- Qualified DBT-JRF in 2011 with AIR: 1 (topper in A list)
- ICAR JRF awarded in Plant Biotechnology with All India Rank 2
- Gold medalist in B.Sc.

Personal Details

Husband's name	Dhiman Chakravarty
Father's Name	Ram Binay Singh
Date of Birth	15 July 1984
Sex	Female
Nationality	Indian
Conversant in	Bengali, Hindi and English

Present Address:

Innovative Apartment, Flat No: 401
Sector: 36, Seawoods, Nerul
Navi Mumbai,
Maharashtra-400706

Mobile: 9987316535
E-mail: soni1507@gmail.com

Declaration

The information provided above is complete and true to the best of my knowledge.

Place : Mumbai
Date : 3/3/2022

Sujata Kumari