Department of Biotechnology
School of Biological Sciences

Dr. Hari Singh Gour Vishwavidyalaya
(A Central University)
Sagar, (M.P.) 470003
INDIA
About Us: The Department of Biotechnology was established in 2001 under Faculty of Science and is currently under School of Biological Sciences. The MSc and PhD programs of the department prepare quality human resource for research in academic and industrial setting. The department provides comprehensive and quality educational and research avenues to the students through its programs. The department’s current research areas include plant biotechnology with focus on development of transgenic plants and disease biology with emphasis on cancer biology and ion channel physiology.

Mission: The Department of Biotechnology is committed for providing research and educational programs of international standards to the students. We seek to provide rich educational experience to the students that includes rigorous theoretical courses and practicals to understand the concepts of biology. In addition, our department constantly updates students with recent technological and technical advances in the field of biotechnology. The ultimate objective of our department is to train students to use biological concepts and develop innovative technologies for the benefit of mankind.

Vision: The department envisions to develop a robust interdisciplinary research environment while maintaining personalized research environment to perform research of national and international prominence. One of the major focus of the department will be to effectively integrate the educational and research programs to deliver maximum output in terms of student training and career development. The department foresees to expand the research focus to areas including cancer biology, cell biology, DNA replication and repair, stem cell research, gene expression, molecular medicine and plant molecular biology. The goal of the department is to develop next generation young scientists who will make breakthrough discoveries and provide cost effective solutions to various for human problems through creative and innovative research.
**Research interests:** Molecular biology and stress physiology

**Selected Publications**

- Bharat Neekhra, Divya Pandey, Meeta Mishra, **Subodh Kumar Jain** Molecular Marker Approach In Honey Bee: A Review. *Int J Pharm Bio Sci* **2012** July; 3(3): (B) 261 – 271 (Impact Factor 0.47)

- Jain, **Subodh Kumar** and Zelena Dora: Gender specific influence of endogenous glutamate release on stress-induced fear in rats. (Accepted for publication on 5.11.2010 in Endocrine Regulation, Bratislava, Slovak Vol. 45, 13-21 **2011** ISSN: 0344-0338, **Impact factor**: 1.08)

- Role and clinical significance of lymphocyte mitochondrial dysfunction in type 2 diabetes mellitus. Translational Research **(2011)** vol.158 No.6, 344-359 (Impact Factor 2.763)

- Mishra, P.K.; Raghuram, GV; Bhargava, A; Ahirwar, A; Samarth, R; Upadhyaya, R; Jain, **Subodh Kumar**, Pathak, Neelam: In vitro and in vivo evaluation of the anticarcinogenic and cancer chemopreventive potential of a flavonoid-rich fraction from a traditional Indian herb Selaginella bryopteris. *British Journal of Nutrition* **(2011)**, 106, 1154-1168. (Impact Factor 3.45)


**Current Research Grants**

- RAPD-PCR based biomarker characterization and genetic diversity of stored grain pest *C. maculatus* and *C. chinentis* of Madhya Pradesh. *Funded from MPCST*

- Design and validation of a clinical translational algorithm for molecular risk-assessment of hepatocellular carcinoma. *Funded from UGC*

**Students**

- Dr. Bharat Neekhra, Postdoctoral fellow

- Abdul Anvesh Mansoori, PhD candidate
Dr Chandrama Prakash Upadhyaya
Assistant Professor Stage II
PhD, Botany
Email: cpupadhyay@gmail.com

Research interests: Plant Molecular Biology, Plant Functional Genomics, Stress Physiology and Nutrigenomics

Selected Publications


Current Research Grants

- Isolation, characterization and over-expression of CaM, a calcium dependant protein in tomato. Funded from DBT under RGYI project.

- Investigating and probing RBC-Endothelial cell interaction through ex-vivo cerebral malaria model to develop adjuvant therapy for malaria pathology. Funded from DBT under twinning programme in collaboration with IIT Guwahati.

Students

- Deepak Baghri, PhD Candidate
Dr Rajaneesh Anupam
Assistant Professor Stage II
PhD, Biochemistry and Molecular Biology
Email: rajaneeshanupam@gmail.com

Research interests: Cancer biology, viral host-protein interactions, anti cancer drugs

Selected Publications


Current Research Grants

- Role of HTLV p30 and REG-gamma interaction in DNA damage regulation. Funded from UGC under start-up grant scheme.

Students

- Priyanka Namdev, PhD Candidate
**Research interests:** Voltage gated calcium channels in physiology and pathophysiology, Cell signaling.

**Selected Publications**


**Current Research Grants**

- Role of C-terminus of T-type voltage gated calcium channels in regulating channel activity and expression”. Funded from DBT under under Bio-CARe scheme.

**Students**

- Divya Rawat, PhD Candidate
Departmental Facilities

DNA Sequencer (CIF)
Flow Cytometer (CIF)
Plant Tissue Culture
PCR Machine
Microscope
Autoclave
Shaking Incubator
Cooling Centrifuge
Laminar Air Flow
Electronic Balance
Fridge and -20 Freezer
Rotary Shaker
Fermentor
Central Facilities

Following instruments are available through the state-of-the-art **Central Instrumental Facility (CIF)** of Dr. Hari Singh Gour Vishwavidyalaya:

- Confocal Microscope
- Atomic Force Microscope
- Scanning Electron Microscope (SEM)
- Transmission Electron Microscopy (TEM)
- Micro-Raman spectrophotometer
- Nuclear magnetic resonance (NMR)
- Real Time PCR
- Ultracentriguge
- Nano spray dryer
- Fourier transform infrared spectroscope (FTIR)
- High performance thin layer chromatograph (HPTLC)

Courses Offered

The Department of Biotechnology currently offers the following postgraduate courses. The admission to both the courses is through national entrance exam conducted by Dr. Hari Singh Gour Vishwavidyalaya during May-June every year.

- **MSc Biotechnology**
  - Duration: 4 semesters
  - Total seats: 20

- **PhD Biotechnology**
  - Duration: 3-4 years
  - Total seats: Variable depending on the availability with the faculty