

## Dr. Uttara V. Oak

---

### Experience Summary:

- **11 years of Post graduate and undergraduate level teaching**
- **Guided PG student projects** related to antimicrobial drug resistance, biofilm inhibition using Nanoparticles, textile wastewater treatment, use of PGPR in crop stress management.
- **Approved teacher of Savitribai Phule Pune University (formerly University of Pune)**
- **8 years Industrial Research experience**
- Involved in antimicrobial drug discovery from natural products from actinomycetes and fungi at research centre of a multinational company. The work comprised of isolation, screening of microbes and evaluating antimicrobial potential and partial purification of active compound.
- A **US and EU patent** for Antimicrobial Drug with novel chemical structure
- **Ph.D. in Microbiology** - topic entitled “Studies on Degradation of Triphenyl Methane and Azo Textile Dyes by Halophilic and Alkaliphilic Bacteria”. Isolated a novel alkaliphilic bacterium degrading industrially used azo dye.
- Five publications: Highest **IF – 8.943**

### Education:

May 1990

**B.Sc. (Microbiology)** from University of Mumbai.

May 1992

**M.Sc. (Microbiology)** from University of Mumbai.

April 2002

**B.Ed.** from K.J. Somaiya Comprehensive College of Research and Education, Mumbai.

January 2018

**Ph. D. in Microbiology** from Dept. of Microbiology, Abasaheb Garware College, Savitribai Phule Pune University, Pune.

## **Work Experience:**

### **Industrial experience:**

**November 1993- June 2001**

- Worked at Microbiology Dept. (Natural Products), Quest Institute of Life Sciences, **Nicholas Piramal Ind. Ltd. Mumbai** (Formerly **Hoechst Research centre, Mumbai**).
- Worked as part of Drug discovery group (Natural products) involving anti-infective compounds and have a **US and EU patent** to my credit.

### **Teaching experience:**

**June 2004- April 2005**

Taught Biology at St. Rock's Jr. College, Mumbai.

**June 2006-April 2007**

Taught Biology in the Junior college wing at H.V. Desai College, Pune

**December 2007- April 2014 and July 2017 – Till date**

Dept. of Biotechnology, PE Society's Modern College, Ganeshkhind, Pune.

- Approved teacher of Savitribai Phule Pune University, Pune.
- Taught theory and practical courses in Bacteriology and Virology, Immunology, Environmental Biotechnology, Fermentation Technology and Bioprocess Engineering and Fungal Biotechnology at post graduate level.
- Taught theory and practical courses in Microbiology, Immunology, Microbial Biotechnology and Large-Scale Manufacturing Processes at undergraduate level.
- Guided PG students in their research projects
- Member of Project Investigation Group of DST-FIST (second cycle) and DBT-BUILDER schemes implemented in the college

### **Examination Experience:**

- Worked as paper setter, examiner and moderator in practical and theory examination of Savitribai Phule Pune University, Pune.

### **Administrative Experience:**

- **In-charge of Criterion III**, for NAAC assessment- Modern College, Ganeshkhind, Pune - 411016.
- Worked in many internal college committees (**NIRF**, **Swarmadhuri** - A classical music competition, **Vividha**- an entrepreneurship development event for students) for organization of events in the college
- Facilitated student for placement and summer training through contacts

### Other interests:

- Trained in Indian classical music
- Interested in trekking and other outdoor activities

### Other Achievements:

#### Patents:

- **US 20020183267 A1 and EP 1129208 A1 (text from WO2000028064A1)** - Vancoresmycin, a process for its production and its use as a pharmaceutical

#### Publications:

- **Oak, U.**, Khare, T. (2022). Nanoparticle Functionalization: Approaches and Applications. In Nanostrategies for addressing antimicrobial resistance- Nano-Diagnostics, Nano-Carriers, and Nano-Antimicrobials (pp. 157-181). Springer Nature Switzerland AG. [https://doi.org/10.1007/978-3-031-10220-2\\_4](https://doi.org/10.1007/978-3-031-10220-2_4)
- Kaur, K., Reddy, S., Barathe, P., **Oak, U.**, Shriram, V., Kharat, S. S., Govarthanam, M., & Kumar, V. (2022). Microplastic-associated pathogens and antimicrobial resistance in environment. *Chemosphere*, 291, 133005. <https://doi.org/10.1016/J.CHEMOSPHERE.2021.133005>
- Hasani, S., Khare, T., & **Oak, U.** (2021). Antibiofilm activity of selenium nanorods against multidrug-resistant staphylococcus aureus. *MGM Journal of Medical Sciences*, 8 (4), 415. [https://doi.org/10.4103/mgmj.mgmj\\_35\\_21](https://doi.org/10.4103/mgmj.mgmj_35_21)
- **Oak, U.**, Srivastav, A., & Kumar, V. (2019). Perspectives of Plant Growth-Promoting Rhizobacteria in Conferring Salinity Tolerance in Crops. In *Microbial Interventions in Agriculture and Environment* (pp. 299–313). Springer Singapore. [https://doi.org/10.1007/978-981-32-9084-6\\_14](https://doi.org/10.1007/978-981-32-9084-6_14)
- Khare, T., **Oak, U.**, Shriram, V., Verma, S. K., & Kumar, V. (2019). Biologically synthesized nanomaterials and their antimicrobial potentials. In *Comprehensive Analytical Chemistry* (Vol. 87, pp. 263–289). Elsevier B.V. <https://doi.org/10.1016/bs.coac.2019.09.002>
- **Oak, U.**, Ghattargi, V., Pawar, S., & Bhole, B. (2016). Degradation of Drimarene Red, a reactive textile dye by an extremophilic Bacillus sp . isolated from fresh water. *International Journal of Applied and Pure Science and Agriculture (IJAPSA)*, 2(3), 105–113.

**Dr. Uttara Vinayak Oak**

**Email:** [uttaraoak@gmail.com](mailto:uttaraoak@gmail.com)  
[uttara@moderncollegegk.org](mailto:uttara@moderncollegegk.org)

**Mobile #** +919890217917