

## A BRIEF INTRODUCTION OF DR. ARCHANA RATH

Dr. Archana Rath is a doctorate in Reproductive Immunology and Molecular Biology from the prestigious National Institute of Immunology, New Delhi. She has experience of working in diverse reputed research organization like Quest Institute of Life Sciences, Nicholas Piramal Ltd and Advanced Centre for Treatment, Research and Education in Cancer (ACTREC). She has been working as a full time faculty in the Department of Biotechnology, University of Mumbai, since October 2008. Recently she has successfully completed a major research project funded by the Board of Research in Nuclear Sciences, Department of Atomic Energy (BRNS, DAE) entitled: '*Isolation and molecular characterization of antibiotic resistance in non-pathogenic organisms from food*'. Currently she is working on analysing antimicrobial resistance (AMR) associated with food and environment. Specifically she is interested in studying antimicrobial resistance patterns at the molecular level in microbial population using conventional techniques as well as metagenomics. Another area of research that is being explored in her lab is to exploit inherent defence mechanisms of microbes to counteract antibiotic resistance. Her lab would also be focussing on identifying naturally occurring novel antimicrobials and explore the possibility of nanotechnology to modify the effect of antimicrobials. In the last few years, more than 17 M.Sc. and M.Phil. students have taken up this challenging area of research as their project/ thesis topic. Dr. Rath is a recognized Ph.D. guide in the subject of Biotechnology. Currently, three Ph.D. research students and a Project fellow under the DST-PURSE Scheme of University of Mumbai are working under the guidance of Dr. Rath. Students with CSIR-UGC/NET or equivalent qualifications can directly contact her at [arath09@gmail.com](mailto:arath09@gmail.com). Her broad research interests include antibiotic resistance and antimicrobials, food microbiology and biotechnology, environmental biotechnology and production of value added products for sustainable development.

### **Projects Undertaken:**

1. DAE-BRNS Project – December 2012 to December 2016
2. DST-PURSE Project – on-going

### **Latest Publications on Antibiotic Resistance:**

1. Naik O, Shashidhar R, Rath D, Bandekar JR, Rath A (2018). Characterization of multiple antibiotic resistance of culturable microorganisms and metagenomic analysis of total microbial diversity of marine fish sold in retail shops in Mumbai, India. *Environ. Sci. Pollut. Res.* DOI: 10.1007/s11356-017-0945-7. <https://link.springer.com/article/10.1007/s11356-017-0945-7>
2. Naik O, Shashidhar R, Rath D, Bandekar JR, Rath A (2017). Metagenomic analysis of total microbial diversity and antibiotic resistance of culturable microorganisms in raw chicken meat and mung sprouts (*Phaseolus aureus*) sold in retail markets of Mumbai, India. *Curr. Sci.* 113(1):71-79. <http://www.i-scholar.in/index.php/CURS/article/view/152753>

Special reviews on the above publications appeared across various media portals:

1. The research work appeared as a short story in a **televised show, “Science Monitor” on “Rajya Sabha TV”**, Vigyan Prasar, an autonomous Institute of the Department of Science & Technology, aired on 5<sup>th</sup> August 2017.  
<https://www.youtube.com/watch?v=SPnSDrVqACc>
2. **“Hindustan Times”** <https://www.hindustantimes.com/cities/fish-bacteria-can-resist-drugs-used-to-treat-tb-malaria-reveals-mumbai-university-study/story-RKEezTi65fzchtZA2YQieN.html> published on 23<sup>rd</sup> April 2018.
3. **“The Hindu”** <http://www.thehindu.com/todays-paper/tp-national/tp-other-states/mumbai-study-shows-drug-resistant-bacteria-in-chicken-moong-beans/article19213505.ece> published on 5<sup>th</sup> July, 2017.
4. **“Outlook”** <https://www.outlookindia.com/website/story/scientists-discover-antibiotic-resistant-bugs-in-raw-chicken-sprouts/299659> published on 20<sup>th</sup> July, 2017.
5. **“Biotech Times”** <https://biotechtimes.org/2017/07/20/study-finds-antibiotics-bugs-chicken-sprouts/> published on 20<sup>th</sup> July, 2017.
6. **“Indian Science Journal”** <http://www.indiansciencejournal.in/health-news/raw-chicken-and-sprouted-beans-in-mumbai-unhealthy-206806> published on 20<sup>th</sup> July, 2017.
7. **“India Science Wire”** [http://vigyanprasar.gov.in/isw/antibiotic\\_sea\\_fishes\\_story.html](http://vigyanprasar.gov.in/isw/antibiotic_sea_fishes_story.html) published on 20<sup>th</sup> December, 2017.
8. **“India Water Portal”** <http://hindi.indiawaterportal.org/node/66772> published on 20<sup>th</sup> December, 2017.
9. **“Mongabay”** <https://india.mongabay.com/2018/01/11/mumbai-fish-harbour-high-levels-of-antibiotic-resistant-bacteria/> published on 11<sup>th</sup> January, 2018.

*A list of her important publications can be accessed at*

<https://scholar.google.co.in/citations?user=zO6GY4kAAAAJ&hl=en&oi=ao>