

## CURRICULUM VITAE

### **Dr. Ritu Pasrija**

Assistant Professor  
Department of Biochemistry  
Maharshi Dayanand University  
Rohtak, Haryana-124001

#### **Educational Qualifications:**

Masters Degree in Biochemistry- Jamia Hamdard 2002  
PhD - Life Sciences - Jawaharlal Nehru University 2007

#### **Work experience:**

Assistant Professor	Maharshi Dayanand University Rohtak	2010-date
Research Scientist	Ranbaxy Research Labs	2008- 2010
Lecturer	Guru Nanak Dev University, Amritsar	2007- 2008

#### **Other Functions:**

Member: PG Board of studies 2010-12; 2014-16; 2018-20  
Member: Doctorate Research committee -2013  
Member: counseling committee for M.Sc. admission.  
Member: counseling committee for Ph.D. admission.  
Member: Departmental anti-ragging committee.  
Member Committee of Member of Life Sciences 2016, 2020  
Department coordinator: Placement Cell.  
Departmental coordinator: University-Industry Liaison Cell.

#### **Area of research:**

*Microbiology:* The incidences of drug resistance due to opportunistic pathogens are on rise, posing considerable diagnostic and therapeutic challenges. Pathogens gain resistance to already available drugs due to various inherent and acquired mechanisms, including- failure in drug export by extrusion pumps, alterations in the target, as well as up-regulation of the target gene. Combinations of various resistance mechanisms are responsible for drug resistance development in clinical isolates of bacterial and fungal pathogens. In our lab, we are trying to understand the mechanism of drug resistance development and validate targets for novel drugs.

#### **PhD Students**

Ongoing: 2  
Completed: 2

**Projects Ongoing/Completed:**

SERB :	2021-24 (50 lac)
DST –FAST TRACK:	2013-16 (21 lac)
UGC (Major):	2013-16 (13 lac)
DBT IPLS :	2012-17 (7.4 lac)
R.K.Fund :	2014, 2015, 2020

**Reviewer:**

Project for funding review DST-SERB

Journals including Biotechnology and Applied Biochemistry, Critical Care Research and Practice

**Publications: -**

1. CaCdr1p and CaMdr1p multidrug transporters of *Candida albicans* belonging to superfamilies of ABC and MFS, respectively, display different lipid specificities. **Ritu Pasrija**, Sneha L. Panwar and R. Prasad *Antimicrobial Agents and chemotherapy* (2008) Feb; 52(2): 694-704.
2. Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *C. albicans*: identification of amino acid residues critical for drug/H<sup>+</sup> transport. **Ritu Pasrija**, D. Banerjee and R. Prasad. *Eukaryotic Cell* (2007) Mar; 6(3): 443-53.
3. Squalene epoxidase encoded by *ERG1* affects morphogenesis and drug susceptibilities of *C. albicans*. **Ritu Pasrija**, S. Krishnamurthy, T. Prasad, Joachim F. Ernst and R. Prasad. *Journal of Antimicrobial Chemotherapy* (2005) Jun; 55(6): 905-13.
4. Lipid Fluctuations affect the drug susceptibilities and morphogenesis in *C. albicans*. **Ritu Pasrija**, T. Prasad, R. Prasad. *Biochemical Society Transactions* (2005) Nov; 33(Pt 5): 1219-23.
5. Membrane Homeostasis and Multidrug Resistance in Yeasts. Sneha L. Panwar, **Ritu Pasrija** and R. Prasad. *Biosciences Reports* (2008) 28: 217-228.
6. Rational Mutational Analysis of a multidrug MFS transporter CaMdr1p of *C. albicans* by employing a Membrane environment based Computational approach to predict functionally critical amino acids. Khyati Kapoor, Mohammad Rehan, Ajeeta Kaushiki, **Ritu Pasrija**, Andrew Lynn & Rajendra Prasad. *PLoS Comput Biol* (2009) 5(12): e1000624. doi:10.1371/journal.pcbi.1000624
7. ABC (ATP binding cassette) multidrug transporter Cdr1p of *C. albicans* prefer to be within membrane rafts. **Ritu Pasrija**, Deepika Kundu & Mohammad Naime. *Reviewed Proceedings of National Seminar on PTSG* (ISBN: 978-81-920945-3-3) (2014):340-351.
8. Interaction of curcumin with azoles and polyenes against *Aspergillus* infections. **Ritu Pasrija** and Deepika Kundu. *Research J Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences* (2018) July; 4(4): 271-279.
9. First report of Antifungal activity of Tamoxifen against Filamentous Fungi. **Ritu Pasrija**, Deepika Kundu. *International Journal of Life Sciences Research* (2018); 6(4): 296-298
10. Phylogenetic and conservation analysis of MFS transporters. Poonam Vishwakarma, Atanu Banerjee, **Ritu Pasrija**, Rajendra Prasad, Andrew M. Lynn (2018) 3 *Biotech*

- (2018) Nov; 8(11):462.
11. The E-helix is a central core in a conserved helical bundle involved in Nucleotide binding and transmembrane domain intercalation in the ABC transporter superfamily. Poonam Vishwakarma, Atanu Banerjee, **Ritu Pasrija** Rajendra Prasad, Andrew M. Lynn (2018). *International Journal of Biological Macromolecules* (2019) 127: 95–106.
  12. Phospholipid biosynthesis disruption renders the yeast cells sensitive to antifungals. Deepika Kundu, Saif Hameed, Zeeshan Fatima, **Ritu Pasrija**. *Folia Microbiol (Praha)*. (2020); 65: p 121–131 (doi: 10.1007/s12223-019-00713-3)
  13. The ERMES (Endoplasmic Reticulum and Mitochondria Encounter Structures) mediated functions in fungi. Kundu D, **Pasrija R** (2020) *Mitochondrion*. 52:89-99
  14. The deregulated immune reaction and cytokines release storm (CRS) in COVID-19 disease. **Pasrija R**, Naime M. *Int Immunopharmacol*. (2021);90:107225.

### Books and Chapters-

1. Membrane lipids and multidrug resistance in the pathogenic yeast *Candida albicans*. Lambert Academic Press. Germany. **Ritu Pasrija**. (2016) ISBN (978-3-659-85587-0).
2. Book chapter entitled 'THE WONDER DRUG: Curcumin as anti-infective agent' in the book entitled "HERBAL MEDICINES". Studium Press LLC, USA. **Ritu Pasrija** (2016). ISBN (978-93-85046-09-04)
2. Book chapter entitled 'Role of Mitochondria in Fungal Drug Resistance' in the book entitled 'Pathogenicity and Drug resistance of Human Pathogens' (Mechanisms and Novel Approaches)-Springer Press. **Ritu Pasrija**, Deepika Kundu (2019). ISBN (978-981-32-9448-6)

### Membership-

- Society of Biological Chemists (SBC).
- The Indian Science Congress (ISC).
- Association of Microbiologists of India (AMI).

### Awards and honours:

1. First position in M.Sc part I in 2001 in Jamia Hamdard.
2. Awarded Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF) from CSIR, Ministry of Human Resource and Development, Govt of India in 2002.
3. Qualified Junior Research fellowship (JRF) test, by Indian Council of Medical Research (ICMR) in 2002.
4. Qualified the Graduate Aptitude test in Engineering (GATE), conducted by Indian Institute of Technology, Delhi, (92.7 percentile) in 2002.
5. Best poster prize in the 75th Society of Biological Chemists (SBC), held in Jawaharlal Nehru University (Dec 8-11, 2006).
6. Second prize for the poster in annual research festival organized by School of Life Sciences, J.N.U. (Feb 24-27, 2007).

7. Awarded full travel grant from CSIR for Poster presentation in the 'Second FEBS Advanced Lecture Course Human Fungal Pathogens Molecular Mechanisms of Host-Pathogen Interactions and Virulence' in La Colle-sur-Loup, Nice, France (May 11-17, 2007).
8. Awarded travel grant from DBT (Department of Biotechnology), India for poster presentation in the 9th American society for Microbiologists (ASM) conference on *Candida* and Candidiasis held at Jersey City, New Jersey, USA (24-28 March, 2008). (*Grant not availed*)
9. Chosen for Interdisciplinary Life Science Programme (IPLS -DST) for Advanced Research and Education grant among life sciences faculties of the Maharshi Dayanand University.
10. Selected and Awarded DST -FAST TRACK Young scientist award for research project 2013-16.
11. First PhD student awarded with University Best Thesis Award.

#### **Conferences organized**

- Organizing secretary National Seminar on "Molecular Technique-The face of Modern Sciences" on Oct 24, 2011, in Department of Biochemistry in Maharshi Dayanand University, Rohtak.
- Organizing Member, "India-Japan Seminar organized by Department of Biochemistry, Maharshi Dayanand University, Rohtak on October 30, 2010.
- Organizing Member in the workshop 'Genomics and Proteomics' organized by Department of Biochemistry, Maharshi Dayanand University, Rohtak, Haryana between Mar 3-5, 2014.