

CURRICULUM VITAE

Dr. Ritu Pasrija

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

Educational Qualifications:

Institution	Degree	Year(s)	Field Of Study
Gargi College Delhi University	B.Sc.	2000	Biology
Jamia Hamdard New Delhi	M.Sc.	2002	Biochemistry
Jawaharlal Nehru University, New Delhi	Ph.D.	2007	Yeast Biology, Molecular Biology

Projects:

Title	Funding Agency	Tenure	Amount
To decipher the role of ERMES complex in organelle cross talk and drug resistance in the fungal pathogen <i>Cryptococcus neoformans</i>	DST-SERB	2021-2024	50,12,832/-
Study of the effect of antifungal/ inhibitor on membrane rafts in pathogenic yeast	UGC	2013-2017	14,15,800/-
Study of the importance of phospholipids membrane rafts and virulence of fungal pathogens	DST-SERB	2013-2017	21,40,000/-
DBT-IPLS (Consortium Project)	IPLS, DBT		6,30,000
Elucidation of the Antifungal activity of Ar neoplastics Endst. DSW/14/358 (dt 22.02.14)	R.K. Fund M.D. University	Mar –Nov 2014	
Effect of <i>PSD1</i> gene on drug resistance in : fungal pathogen Endst. DSW/15/712 (dt 11.03.15)	R.K. Fund M.D. University	Mar –Dec 2015	
Study of Mechanism of action (MOA) of Extracts of Fruits of <i>Zanthoxylum armatu</i> for their antifungal activity.	R.K. Fund M.D. University	Mar –Dec 2020	

Employment Details:

Employer Details	Designation	Duration
Guru Nanak Dev University Amritsar	Lecturer	Aug 16, 2007- Dec 2008
Ranbaxy Research Labs	Research Scientist	Dec 2008- Mar 2010
Maharshi Dayanand University, Rohtak	Assistant Professor	Mar 26, 2010-2022
Maharshi Dayanand University, Rohtak	Associate Professor	Mar 27, 2022-Till date

PhD Students-

Completed: 2

Ongoing: 4

Publications: -

1. Kumar V, Sharma N, Umesh M, Selvaraj M, Al-Shehri BM, Chakraborty P, Duhan L, Sharma S, **Pasrija R**, Awasthi MK, Lakkaboyana SR, Andler R, Bhatnagar A, Maitra SS. Emerging challenges for the agro-industrial food waste utilization: A review on food waste biorefinery. *Bioresour Technol.* 2022 Oct;362:127790. doi: 10.1016/j.biortech.2022.127790 (I.F.: 11.889)
2. **Pasrija R***, Naime M. Resolving the equation between mucormycosis and COVID-19 disease. *Mol Biol Rep.* 2022 Jan 22:1-8. doi: 10.1007/s11033-021-07085-3. (I.F.: 2.74)
3. The deregulated immune reaction and cytokines release storm (CRS) in COVID-19 disease. **Pasrija R***, Naime M. *Int Immunopharmacol.* (2021);90:107225. (I.F.: 5.714)
4. The ERMES (Endoplasmic Reticulum and Mitochondria Encounter Structures) mediated functions in fungi. Kundu D, **Pasrija R*** (2020) *Mitochondrion.* 52:89-99. (I.F.: 4.5)
5. 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) (I.F.: 2.6)
6. 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. (I.F.: 8.0)
7. 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 (I.F.: 2.89)

8. 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 (I.F.: 4.5)**
9. CaCdr1p and CaMdr1p multidrug transporters of *Candida albicans* belonging to superfamilies of ABC and MFS, respectively, display different lipid specificities. **Ritu Pasrija**, Sneh L. Panwar and R. Prasad ***Antimicrobial Agents and chemotherapy* (2008) Feb; 52(2): 694-704. (I.F.: 4.5)**
10. Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *C. albicans*: identification of amino acid residues critical for drug/H⁺ transport. **Ritu Pasrija**, D. Banerjee and R. Prasad. ***Eukaryotic Cell* (2007) Mar; 6(3): 443-53. (I.F.: 3.5)**
11. 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. (I.F.: 5.7)**
12. 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. (I.F.: 4.919)**
13. Membrane Homeostasis and Multidrug Resistance in Yeasts. Sneh L. Panwar, **Ritu Pasrija** and R. Prasad. ***Biosciences Reports* (2008) 28: 217–228. (I.F.: 3.9)**
14. 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.**
15. 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.**
16. 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**
17. Gibberellin A3 mediated enhanced transcriptional rate and mRNA stability of 3-hydroxy-3-methylglutaryl coenzyme A reductase 1 (NtHMGR1) in *Nicotiana tabacum* L. Raman ManoharLal, Lucky Duhan, **Ritu Pasrija**, G.V.S. Sai Prasad (November 2022) ***Notulae Scientia Biologicae* (In press).**

Books and Chapters

1. Book entitled **“Membrane lipids and multidrug resistance in the pathogenic yeast *Candida albicans*”**. (2016) Lambert Academic Press. Germany, **Ritu Pasrija***, ISBN (978-3-659-85587-0)
2. Book chapter **entitled ‘THE WONDER DRUG: Curcumin as anti-infective agent’**. **Studium Press LLC, USA book on "HERBAL MEDICINES"**, (2016) **Ritu Pasrija***, ISBN (978-93-85046-09-04)
3. 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 (2020) **Ritu Pasrija***, Deepika Kundu. ISBN (978-981-32-9448-6).
4. Book chapter entitled **‘Pharmaceutical Biotechnology and Drug Design** in the book entitled **‘Handbook of Biotechnology’** by Daya Publishing & Astral International (Jan 2022), **Ritu Pasrija***, ISBN (978-93-5461-364-7)
5. Book chapter entitled **“Fungal Hydrolytic enzymes produced by Plant Growth-Promoting Rhizobacteria (PGPR)”** in the book **PGPR** by Springer Nature Switzerland AG (2022), Lucky Duhan, Deepika Kumari, Deepika Kumari, Rohit Verma and **Ritu Pasrija*** (p:313-333). ISBN 978-3-031-07558-2
6. Book chapter entitled **“Bioinformatics Overviews”** in book **“Information Retrieval in Bioinformatics: A Practical Approach”** by Palgrave Macmillan (Jan 2023). **Ritu Pasrija*** (In press)

Life membership-

1. Society of Biological Chemists (SBC)
2. The Indian Science Congress
3. Association of Microbiologists of India (AMI)
4. International Society for Human and Animal Mycology (ISHAM-2022)

Other Duties

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

Reviewer:

- Reviewer for DST-SERB Projects
- Journals including Biotechnology and Applied Biochemistry, Critical Care Research and Practice, Plos One, Frontier in Pharmacology etc

Professional recognition, awards, fellowships received:

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 the 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 entitled "Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *Candida albicans*: identification of amino acid residues critical for drug/H⁺ transport" in the 75th Society of Biological Chemists (SBC), held in Jawaharlal Nehru University (Dec 8-11, 2006).
6. Second prize for the poster entitled "A MFS Antiporter *CaMDR1* of *C. albicans* is a Major drug Transporter" in the "BIOSPARKS 2007" an 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 entitled "Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *Candida albicans*: identification of amino acid residues critical for drug/H⁺ transport." 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 2.3 cr, grant among life sciences faculties of the Maharshi Dayanand University in 2013.
10. Awarded the DST –FAST TRACK YOUNG SCIENTIST AWARD for research project in 2013.
11. First PhD Student got the best thesis award in university in 2019.
12. Best Scientist award in Poster presentation on "The *Zanthoxylum armatum* fruit's oil Exterminates *Candida* Cells by Inhibiting Ergosterol Biosynthesis, without generating Reactive Oxygen Species, in the International Conference "Emerging Trends in Biotechnology And Sustainable Chemistry (ETBSC-2022)" organized by Baba Farid College and Bhatinda Central University, between 27-29 April 2022.
13. Awarded with the Research Promotion award by Maharshi Dayanand University in 2022.

Oral/Posters presentation and Conferences attended-

1. Poster entitled **“Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *Candida albicans*: identification of amino acid residues critical for drug/H⁺ transport.”** in the ‘Second FEBS Advanced Lecture Course Human Fungal Pathogens Molecular Mechanisms of Host-Pathogen Interactions and Virulence’ in La Collesur-Loup, France between May 11-17, 2007.
2. Poster entitled **“A MFS Antiporter *CaMDR1* of *C. albicans* is a Major drug Transporter”** in the ‘**BYFF 2007 (Biology of yeast and filamentous fungi)**’ an International Meeting on Yeast Biology held at the National Chemical Laboratory (NCL), Pune, India, Feb 15-17, 2007.
3. Poster entitled **“Membrane raft lipid constituents affect drug susceptibilities of *C. albicans*”** in the ‘**BYFF 2007**’ an International Meeting held at the National Chemical Laboratory (NCL), Pune, India, Feb 15-17, 2007.
4. Poster entitled **“*ERG1* of *C. albicans* affect the drug susceptibility and morphogenesis”** in the ‘**Yeast 2005**’ an International Meeting held at the Indian Institute of Science (IISc), Bangalore, India, Sep 24-27, 2005.
5. Poster entitled **“Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *C. albicans*: identification of amino acid residues critical for drug/H⁺ transport.”** in the ‘**75th Society of Biological Chemists (SBC)**’ an annual Meeting held at Jawaharlal Nehru University, Dec 8-11, 2006.
6. Poster entitled **“Altered membrane lipid environment affects drug resistance in yeast cells”** in the ‘**Yeast 2003**’ an International Meeting held at the Institute of Microbial Technology (IMTECH), Chandigarh, India, Feb 20-22, 2003.
7. Poster entitled **“A MFS Antiporter *CaMDR1* of *C. albicans* is a Major drug Transporter”** in the ‘**BIOSPARKS 2007**’ an annual research festival organized by School of Life Sciences, JNU, Feb 24-27.
8. Oral Presentation on **“*ERG1* affects the Drug susceptibility and Morphogenesis in pathogenic yeast *C. albicans*”** in the **“BIOSPARKS 2005”** an annual research festival held by School of Life sciences, JNU, Feb 14-16.
9. The abstract was selected for the oral presentation in the **23rd SMYTE** (Small Meeting on Yeast Transport and Energetics), an international meeting held at Manesar, Haryana, Sep 23-26, 2005.
10. The abstract was selected for the oral presentation in the **7th Yeast Lipid Conference**, May 12-14, 2005 at Swansea, U.K. entitled **“Fluctuation in membrane rafts lipid constituents-affect drug susceptibilities of *C. albicans*”**
11. The abstract was selected for the oral presentation in the **8th Yeast Lipid Conference**, Torino, Italy, May 10-12, 2007, entitled **“Membrane alterations differentially affect two superfamilies of Membrane Transporters.”**
12. The abstract was selected for the oral presentation entitled **“MFS transporter *CaMDR1* is an antiporter”** at the **24th SYMTE** meeting held in Prague, 2006.
13. Oral Presentation in National Seminar on “Molecular Technique-The face of Modern Sciences” on Oct 24, 2011 on **“Structure and function analysis of CaMdr1p, a MFS antifungal efflux transporter protein of *Candida albicans*: identification of amino acid residues critical for drug/H⁺ transport’** organized by Department of Biochemistry in Maharshi Dayanand University, Rohtak
14. National Seminar organized by Department of Genetics, on March 20, 2012, on “Recent Advancements in Application of Genetics” in Maharshi Dayanand University, Rohtak.
15. India-Japan Seminar organized by the Department of Biochemistry, Maharshi Dayanand University, Rohtak on October 30, 2010.

16. National Seminar on "Internet: Applications in Research" on March 26, 2011, organized by Department of Zoology in Maharshi Dayanand University, Rohtak.
17. International Research Colloquium on 'Advances in Microbial Biotechnology: Future prospects'(AMBF-2012) organized by Department Of Microbiology in Maharshi Dayanand University, Rohtak-124001 Haryana on November 20, 2012.
18. Attended National Seminar on "Novel Antimicrobials: An Alternative to Clinical Antibiotics" organized by Department of Genetics in Maharshi Dayanand University on Sep 14th, 2013.
19. DSW sponsored and Pharmacy Department organized one-day workshop "Instrumental Methods in Pharmaceutical Research" on 28-11-13.
20. Poster Presentation entitled "Curcumin shows synergism with azoles and polyenes against *Aspergillus* infections" in the 18th Annual convention of Society of Pharmacognosy on "Promotion and Globalization of Indian Herbal product- Perspective and Prospects" organized by Department of Pharmaceutical Sciences, Dayanand University, Rohtak, Haryana between Feb 21-22, 2014.
21. Poster presentation entitled "ABC (ATP Binding Cassette) Multidrug Transporter Cdr1p of *Candida albicans* prefer to be within Membrane Rafts" in the conference 'Next Generation Sciences: Vision 2020 & Beyond' organized by Department of Zoology, Maharshi Dayanand University, Rohtak, Haryana on Mar 8, 2014.
22. Oral presentation on "Site-Directed Mutagenesis (SDM) as a tool to unravel the role of individual amino-acids" in the workshop '**Genomics and Proteomics**' organized by Department of Biochemistry, Maharshi Dayanand University, Rohtak, Haryana between Mar 3-5, 2014.
23. Attended National Seminar on "**Molecular Pathology of Human Genetic Disease**" organized by Department of Genetics in Maharshi Dayanand University on August 23rd 2014.
24. Attended 3rd International research colloquium on '**Interdisciplinary Scope of Microbiology: Present Status and Future Directions (IRCISM-2015)**' organized by Department of Microbiology in Maharshi Dayanand University on 31st January 2015.
25. National Seminar in 'Innovative Researchers in Life Sciences' by Department of Zoology, Maharshi Dayanand University on Feb 21st, 2015.
26. Poster Presentation in National Conference of Natural Products; Current Innovations & Future Trends organized by Department of Genetics in Maharshi Dayanand University on March 19th, 2015.
27. National Seminar on Today's Vision: Save Ozone, Save earth on Sep 16, 2015, organized by Department of Environmental Sciences in Maharshi Dayanand University and Ministry of Earth Sciences, Govt of India.
28. Attended National Research Colloquium on 'Microbes in Food, Energy, and environment: Its importance and Future Prospect" (MFEE-2016) organized by Department of Microbiology and Association of Microbiologists of India-Rohtak Unit on April 2, 2016.
29. Attended a workshop on "Coping Health Issues" organized by Women Studies Centre on Feb 23, 2017.
30. Oral talk in National Symposium on "Recent trends in Biotechnology and Drug Discovery" from Mar 30-31, 2017 in Department of Biotechnology of Shri Mata Vaishno Devi University, Katra.
31. Poster presentation entitled "**Lipids as Determinants of Drug Resistance in *Candida albicans***" in 28th **International Conference on Yeast Genetics and Molecular Biology (ICYGMB)** in Prague, the Czech Republic with duty from 27.08.2017-1.09.2017.

32. National Conference cum Workshop on “Hand on Training on Chromatographic Techniques” on Dec 12, 2017, organized by Department of Pharmaceutical Sciences in Maharshi Dayanand University.
33. Poster presentation in 10th Conference on Yeast Biology Model Yeasts to Fungal Pathogens on Feb 8-11, 2018 jointly organized by School of Life Sciences, JNU and Amity University, Gurgaon.
34. Participated in a one-day National conference cum Awareness Programme on “Protection of Intellectual Property Rights-Need of the Hour” organized by Department of Pharmaceutical Sciences on May 10, 2018.
35. Participated in one-day user awareness workshop on “User-Centric Content to Empower Knowledge”, organized by MDU Rohtak and Elsevier on Sep 4, 2018.
36. Participated in Two days National conference cum workshop on “Recent Trends of CADD in Drug Design & Discovery” organized by Department of Pharmaceutical Sciences, on Nov 2-3, 2018.
37. Participated in National workshop on ‘BIOETHICS IN RESEARCH: A NEED OR COMPULSION’ organized by Department of Genetics on Nov 15, 2018.
38. Poster presentation in International Conference on Microbial Pathogenesis and New Frontiers’ b/w Mar 23-25, 2019 in IMTECH, Chandigarh.
39. Participated in National conference on ‘**Emerging Infectious Diseases**’ organized by Centre of Biotechnology on March 6, 2019.
40. Participated in National seminar on ‘**Laboratory Animal Experimentation**’ organized by Centre of Medical Biotechnology on March 28, 2019.
41. International Seminar on ‘**Sustainable environment and Agriculture under Global Climate Change-2019**’ organized by Department of Environmental Sciences on Feb 21, 2019.
42. Poster Presentation in e-Colloquium on ‘Emerging Trends in Health and Diseases Research’ held on Oct 20, 2020 at Amity University, Haryana.
43. Poster presentation on ‘Mitochondrial Dysfunction from a Novel mechanism in Fungi, affecting Drug Response in the Annual International Conference of the Association of Microbiologists of India and Indian Network for Soil Contamination Research (INSCR) organized between Feb 3-5, 2021.
44. Baba farid Poster presentation on “The *Zanthoxylum armatum* fruit’s oil Exterminates *Candida* Cells by Inhibiting Ergosterol Biosynthesis, without generating Reactive Oxygen Species, in the International Conference “Emerging Trends In Biotechnology And Sustainable Chemistry (ETBSC-2022)” organized between 27-29 April 2022.

Other duties-

- 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.
- Selected and attended 77th **Orientation course** in Academic Staff College (ASC) in Jawaharlal Nehru University (JNU) from 08 Nov - 02 Dec 2011.
- Selected and attended 18th **Refresher course** in Life Sciences in Academic Staff College (ASC) in Jawaharlal Nehru University (JNU) from 07 Jan -01 Feb 2013.

- Selected and attended one week Workshop for on ICT (Including MOOCs, LINUX and FOSS) b/w Nov 11-17, 2014 at UGC Academic Staff College in B.P.S.Mahila Vishwavidyalaya, Khanpur Kalan, Sonipat, Haryana.
- Selected and attended 2nd **Refresher course** in Life Sciences & Biotechnology in Academic Staff College (ASC) in Jawaharlal Nehru University (JNU) from Oct 3-28, 2016.
- Selected and attended one week **Short-term course on 'Effective Teaching Skills'** in UGC–Human Resource Development Centre (HRDC), Pondicherry University from Jan 3-9, 2019
- Attended one-week **Short-term course on 'Research Methodology and Data Analysis'** organized by FDC, M.D. University from Dec 19-24, 2020.
- Attended one-week **Short-term course on 'Cyber Security:Issues,Challenges and Interventions'** organized by HRDC, GND University from Sep 10-16, 2021.