

## Dr. Amiya Das

**Designation-** Assistant Professor

**Affiliation-** Department of Chemistry, Faculty of Engineering and Technology, SRM Institute of Science and Technology, Delhi-NCR Campus, Modinagar, Uttar Pradesh



**E-mail:** [amiyad@srmist.edu.in](mailto:amiyad@srmist.edu.in)

### Academic qualifications

#### Ph.D.

**2019 – 2023**

- Amity Institute of Molecular Medicine and Stem Cell Research (AIMMSCR), Amity University Uttar Pradesh AUUP
- Thesis title: Targeting Cell Cycle Regulatory Proteins In Triple Negative Breast Cancer Using Drug Repurposing Approach
- Guides: Prof. (Dr.) Pallavi Agarwal, Prof. (Dr.) Viney Lather, Prof. (Dr.) Deepti Pandita

#### Master of Technology

**2016- 2018**

- School of Biotechnology, Lovely Professional University, Phagwara, Punjab
- Thesis title: Application of super absorbent polymers for efficient water management and enhanced nutrients availability in agriculture
- Guide: Mr. Himanshu Singh, Head of the Department of Biotechnology
- Grade/position: CGPA 9.41/10, ranked 1<sup>st</sup> in the University

#### Bachelor of Technology (Hons)

**2012 - 2016**

- School of Biotechnology, Lovely Professional University, Phagwara, Punjab
- Thesis title: Production of ethanol from water chestnut
- Guide: Dr. Vikas Kumar
- Grade/position: CGPA 7.83/10

### Research & professional experience

#### SRM Institute of Science and Technology NCR Campus

**Feb. 2024 (Still Working)**

- Currently working as an assistant professor, Department of Chemistry, SRM IST Delhi-NCR Campus, Modinagar, Uttar Pradesh

#### Amity Institute of Molecular Medicine and Stem Cell Research (AIMMSCR) Jul. 2019 - Dec. 2023

- During my PhD work, I performed structure based virtual screening of chemical libraries in Schrodinger Glide Inc. against two cell cycle regulatory proteins MELK & CDC20 for the identification of potential inhibitors and their therapeutic evaluation in TNBC. Two phytochemicals isoliquiritigenin and emodin demonstrated growth inhibitory effects on TNBC cells. Treatment with both molecules downregulated MELK expression, induced cell cycle arrest, accumulated DNA damage and enhanced apoptosis. Similarly, for CDC20, we identified lidocaine possessed better docking score & binding energy along with ADME parameters. Antitumorigenic investigation also demonstrate that lidocaine treatment decreased CDC20 gene expression, induces G2/M cell cycle arrest and apoptosis. Therefore, the study identified isoliquiritigenin, emodin and lidocaine as promising anti-carcinogenic agents for TNBC highlighting MELK/CDC20 as

potential therapeutic target for triple negative breast cancer.

**Dr Lal PathLabs Limited, Ludhiana, India**

**Jul. 2018 – Jun. 2019**

- Worked as a Management trainee, presenting and promoting different health packages to doctors and healthcare organisations
- Developed interpersonal communication skills by interacting with doctors and healthcare management team

**Dream Weaver, Jalandhar, India**

**Jun. 2015 – Jul. 2015**

- Bioinformatics resources processing, analysis, and visualization
- I have learned various bioinformatics tools and softwares like Auto dock, Pymol, Ligplot, Jmol, Rasmol etc
- Learned about different disease-drug based databases like Drug Bank, KEGG etc
- Used and accessed different life science literatures in PubMed Central, Web of Science, Scopus etc.

## Publications

- **Das A**, Prajapati A, Karna A, Sharma HK, Uppal S, Lather V, Pandita D, Agarwal P. Structure-based virtual screening of chemical libraries as potential MELK inhibitors and their therapeutic evaluation against breast cancer. **Chemico-Biological Interactions**. 2023 May 1;376:110443. (IF-5.2)
- **Das A**, Sharma HK, Uppal S, Lather V, Pandita D, Agarwal P. Structure-based virtual screening for identification of potential CDC20 inhibitors and their therapeutic evaluation in breast cancer. **3 Biotech**. 2023 April 26,13:141. (IF-2.9)
- **Das A**, Agarwal P, Jain GK, Aggarwal G, Lather V, Pandita D. Repurposing Drugs as Novel Triple-negative Breast Cancer Therapeutics. **Anti-Cancer Agents in Medicinal Chemistry**. 2022 Feb 1;22(3):515-50. (IF-2.5)
- **Das A**, Pandita D, Jain GK, Agarwal P, Grewal AS, Khar RK, Lather V. Role of phytoconstituents in the management of COVID-19. **Chemico-biological interactions**. 2021 May 25;341:109449. (IF-5.2)
- Singh H, **Das A**, Singh S. Superabsorbent Polymers-A Potential Solution for Irrigation in Agriculture. **Research Journal of Pharmacy and Technology**. 2019;12(5):2566-70. (IF-1)

## Scientific conferences presented/participated

- **Oral Presentation** in **IACR** at Amity University, Noida 2022.
- **Oral Presentation** in **5<sup>th</sup> Global Cancer Summit – 2022**, BioGenesis Health Cluster
- **Poster Presentation** in “**Role of Molecular Chemistry in Drug Design and Development**” Amity University Noida, June 2022.
- Participated in national conference on **Advances in Chemical Science and Technology** at NIT Jalandhar, Panjab, 2017.

## Research Skills and Techniques

### Bioinformatics Softwares:

- Scrodinger Glide Inc., Pymol, Biovia Discovery Studio Visualizer, LigPlot, Chem Dock, KM Plot, Data analysis from cancer patient databases.
- Structural bioinformatics
- Computer aided drug design
- Virtual Screening, Molecular docking (Drug-Protein Interaction)
- ADME analysis (Drug likeness properties evaluation)

### Cell culture techniques:

- Maintaining, subculturing, freezing of cell lines-Breast cancer, Ovarian cancer, Normal Breast cell line.
- Cytotoxicity and cell viability Assay-MTT,SRB,Crystal Vilolet,Trypan Blue.
- Microscopy-Inverted Microscope,Flourescence Microscope,Confocal Microscope
- Cell-based fluorecence assays (ROS, MMP and apoptotic changes).
- Flow Cytometry based cell assays-Cell cycle, Annexin PI, PI

### Molecular Biology techniques:

- DNA, RNA isolation, RNA quantification , cDNA preparation, , Gel electrophoresis, , Conventional PCR, qRT-PCR,
- Protein extraction, Protein quantification, SDS-PAGE ,Western blot analysis.

### Nanoparticles techniques:

- Nanobased approaches,synthesis,drug loading,pharmacokinetics,cellular uptake studies

### Soft Skills:

- MS Office including MS word, MS powepoint and Basic computer skills
- Statistic Analysis by Graph Pad Prism
- Image analysis by ImageJ

## References

### **Dr. Pallavi Agarwal (Ph.D. Guide)**

Professor  
AIMMSCR, Uttar Pradesh  
Sector-125, Noida- 201313,  
U.P  
Email: pagarwal6@amity.edu  
Contact no- 9871288982

### **Dr. Viney Lather (Ph.D. Internal Guide)**

Professor  
Amity Institute of Pharmacy  
Uttar Pradesh Sector-125,  
Noida- 201313, U.P  
Email: vlather@amity.edu  
Contact no- 9729993350

### **Dr. Deepti Pandita (Ph.D. External Guide)**

Professor  
Delhi Institute of Pharmaceutical  
Sciences and Research Mehrauli -  
Badarpur Rd, Sector 3, Pushp Vi-  
har, New Delhi,  
Email: deeptipandi-  
ta@yahoo.co.uk  
Contact no- 7015976090