

Dr. Adina Tatheer

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Statement of Purpose: As a passionate and dedicated researcher, I am committed to advancing the field of drug discovery through the development of innovative therapeutic agents. I bring strong foundation in synthetic chemistry and extensive hands-on experience in advanced laboratory techniques including NMR, chromatography (flash, column, preparative), biotransformation, protein purification, and biological assays. I am eager to contribute my expertise to cutting-edge research. My goal is to apply my skills and knowledge to design and optimize novel compounds with therapeutic potential, ultimately making a meaningful impact in biomedical science.

Current status & Job intentions: I won a competitive *IPFP Fellowship* by HEC, Pakistan and joined *Baba Guru Nanak University, Nankana Sahib* in January 2026. I am actively seeking Postdoc/Industrial positions in organic synthesis and drug discovery and development research groups.

EDUCATION

PhD in Chemistry

Oct 2017 – April 2024

University of Gujrat, Pakistan / University of St Andrews, UK

- **Title of Thesis:** Synthesis of Biologically Potential Derivatives, Drug Hybrids and Bioisosterism Based Analogues of Ibuprofen.
- **Achievements:**
 - Won **IRSIP** scholarship; conducted research under **Prof Rebecca Goss** at University of St Andrews, UK.
 - Collaborative publication in *Marine Drugs* (10.3390/md23060234).
 - Synthesis and characterization of novel bioactive molecules.
 - Publication in *Medicinal Chemistry Research* (10.1007/s00044-022-02955-2).
 - Research associate on HEC funded project (NRPU 6484).
 - Research assistant (volunteer) on HEC funded project (NRPU 6520).
 - Collaborative publication in *Journal of Molecular structure* and *RSC Advances*.
 - Received hands-on training in complex synthesis on schlenk lines, protein purification, and biotransformation, antibacterial assay, NMR.

MPhil in Chemistry

Sep 2014 – Dec 2016

University of Gujrat, Pakistan

- **Title of Thesis:** Synthesis, Characterization and Biological Evaluation of Derivatives of 4-Acetamidobenzaldehyde.
- **Achievements:**
 - Synthesized novel biologically active molecules.
 - Published two research articles in *Letters in Drug Design and Discovery*.

BS (Hons) in Chemistry

Sep 2010 – Aug 2014

University of Gujrat, Pakistan

PUBLICATIONS

1. **Adina Tatheer**, Shahzad Murtaza, Naghmana Kausar, Hammad Ismail, Safeer Ahmed. Synthesis, molecular docking and biological evaluation of novel chlorobenzene sulfonamide analogues of Ibuprofen as anti-bacterial, anti-diabetic and anti-Alzheimer agents. **International Journal of Cheminformatics**, 2025, 03, 35-49.
2. Alan M. C. Obled, Refaat B. Hamed, Edward Spence, Marija K. Zacharova, Sunil V. Sharma, Yunpeng Wang, Rosemary Lynch, Helen Connaris, **Adina Tatheer**, Marie-Lise Bourguet-Kondracki, Gordon J. Florence, Rebecca J. M. Goss. Isolation and identification of cis-2,5-diketopiperazine from a novel *bacillus* strain and synthesis of its four stereoisomers. **Marine Drugs**, 2025, 23, 234. DOI: 10.3390/md23060234
3. **Adina Tatheer**, Shahzad Murtaza, Naghmana Kausar, Ataf Ali Altaf, Samia Kausar, Safeer Ahmed, Shabbir Muhammad, Amjad Hussain. Synthesis, theoretical investigations and biological evaluation of ibuprofen drug hybrids. **Medicinal Chemistry Research**, 2022, 31, 2032–2044. DOI: 10.1007/s00044-022-02955-2
4. Shahzad Murtaza, Naghmana Kausar, Uswa Arshad, Safeer Ahmed, **Adina Tatheer**, Jawayria Najeeb and Abdul Tawab. Novel 2-aminobenzohydrazide derivatives, design, synthesis, anti-Alzheimer evaluation, SAR studies and molecular docking analysis. **Journal of Molecular Structure**, 2022, 1264. DOI: 10.1016/j.molstruc.2022.133271

5. Naghmana Kausar, Shahzad Murtaza, Muhammad Nadeem Arshad, Rahman Shah Zaib Saleem, Abdullah M. Asiri, Ataf Ali Altaf, Samia Kausar, **Adina Tatheer**, Ashraf Y. Elnaggar, Salah M. El-Bahy. Design, synthesis, crystal structure, in vitro cytotoxicity evaluation, density functional theory calculations and docking studies of 2-(benzamido) benzohydrazide derivatives as potent AChE and BChE inhibitors. **RSC Advances**, 2021, 12, 154-167. DOI: 10.1039/D1RA07221H
6. Shahzad Murtaza*, Khoula Zubair Mir, **Adina Tatheer** and Raja SammeUllah. Synthesis and evaluation of chalcone and its derivatives as potential multifunctional anti-Alzheimer agents. **Letters in Drug Design & Discovery**, 2019, 16, 322-332. DOI: 10.2174/1570180815666180523085436
7. Shahzad Murtaza* and **Adina Tatheer**. 4-Acetamidobenzaldehyde Derivatives as Biological Active Candidates; Synthesis, Anti-oxidant, Anti-Alzheimer and DNA Binding Studies. **Letters in Drug Design & Discovery**, 2018, 15, 957-968. DOI: 10.2174/1570180814666171026161646

RESEARCH AND TEACHING EXPERIENCE

- **Visiting Research Fellow; *The Goss Lab, University of St Andrews, School of Chemistry*** **Dec 2021 - May 2022**
 - Carried out microwave assisted synthesis.
 - Performed biotransformation of synthesized molecules.
 - Worked on Shclenk lines for air-sensitive synthesis.
 - Obtained expertise in antibacterial studies.
 - Performed protein purification.
 - Worked on techniques; normal and reverse phase chromatography, extractions, UPLC-Mass Spectroscopy, NMR Spectroscopy.
- **Visiting Lecturer; *University of Gujrat, Pakistan*** **Sept 2017 – Aug 2023**
 - Taught undergraduate courses including Organic, Physical, Inorganic and Analytical Chemistry.
 - Supervised and mentored students in spectroscopic techniques (UV-Vis/FT-IR).
- **Research Associate; *National Research Program for Universities, HEC, Pakistan*** **Oct 2017- April 2018**
 - Synthesized novel pi-conjugated motifs for the applications of Dye Sensitized Solar Cells (DSSC).
 - Assisted in managing purchase documentation for the equipment, chemicals and glassware required in the project.

AWARDS AND HONORS

- Interim Placement for Fresh PhDs (IPFP) Fellow; *HEC Pakistan* **Jan 2026 - Continue**
 - IPFP fellow for one year at BGNU, Nankana Sahib, Pakistan
- International Research Support Initiative Program (IRSIP); *HEC Pakistan* **Dec 2021- May 2022**
 - Visiting Research Fellow for six months at University of St Andrews, Scotland, UK

TECHNICAL SKILLS

- Synthetic chemistry: Expertise in organic synthesis, flash, normal & reverse phase chromatography, TLC and liquid extractions.
- Reaction optimization: Skilled in troubleshooting and refining chemical reactions.
- Analytical techniques: Proficient in NMR, FTIR spectroscopy and molecular docking studies.
- Computational tools: Autodock, Discovery studio, ChemDraw, Graphpad, OriginLab, Mestrenova
- Software skills: Microsoft Office, Accelrys, Adobe Illustrator and Adobe Photoshop (certified).

REFERENCES

Shahzad Murtaza, Ph.D., Professor
 Institute of Chemistry KFUEIT, Rahim Yar Khan
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Rebecca J M Goss, Ph.D., Professor
 School of Chemistry, University of St Andrews, Scotland
 Email: rjmg@st-andrews.ac.uk