

## Faculty Portfolio

### **Dr. Atiya Akhtar Khan**

Assistant Professor  
Department of Pharmacognosy  
College of Pharmacy  
King Khalid University  
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#### **Education:**

Year of Graduation	Qualifications (Specializations if any)	University/College, Country
2019	Ph.D. (Natural Product Chemistry)	Birla Institute of Technology (BIT), Mesra, Ranchi, Jharkhand, India

#### **Professional experience:**

Year	Positions	University/College, Country
Jan, 2019- Present	Assistant Professor	College of Pharmacy, King Khalid University, KSA
July 2014-July 2015	Teaching Assistant	University Polytechnic, BIT, Mesra, Ranchi, India.

#### **Research grand awards:**

Year/Duration of Award	Name of the Award	University/Company, Country
2012	CNPq/TWAS-Full-Time Postgraduate Fellowship-PG/Sandwich Postgraduate Fellowship	Universidade Federal da Paraíba - Brasil
2013-2018	JRF-SRF, Ph.D Research Fellowship Award.	Council of Scientific and Industrial Research (CSIR), Government of India.

#### **Workshops/ Trainings:**

Year	Title	University/Company, Country
2015	Training: Instrumentation handling and analysis.	Research instrumentation facilities, Birla Institute of Technology (BIT), Mesra, Ranchi, Jharkhand, India.

### Research interests:

- Phyto-pharmaceutics;
- Essential oils;
- Nutraceuticals;
- Plant Pigments;
- Extraction, Isolation and structure elucidation of novel compounds from Natural Source and their possible therapeutic activities;
- Plant Mucilage and its stability in food products;
- Food Science
- Microbiology

### Teaching experience:

- Teaching pharmacognosy and phytochemistry courses at King Khalid University, January 2019-2023 present.
- Teaching theory and laboratory classes of BMLT (Bachelors in Medical Laboratory Technology) and DMLT (Diploma in Medical Laboratory Technology) **as teaching assistant during Ph.D** at Birla Institute of Technology, Mesra-835215 Ranchi, Jharkhand from 2014-2015 (1 year).

### Professional membership:

Year	Name of the professional Body	Role
2014-Present	Indian Pharmaceutical Society	Member
2023-Present	Society for Science and Environment	Member

### Research grants: (limit to recent 3-5 grants):

Year/Duration of Grant	Title of the Project	Awarding Body
1443	Effects of different cooking process on the chemical, physicochemical, and biological properties of dietary phytochemicals from Mediterranean and Asian regions: a meta-analytic approach.	King Khalid University, Abha, KSA
1444	<i>In vivo</i> and <i>in vitro</i> investigation of the antidiabetic and anticancer activities of medicinal plants, polyherbal's synergism and their active compounds.	King Khalid University, Abha, KSA

**Patent (s): (limit to recent 3-5 patents)**

<b>Year/Duration of Grant</b>	<b>Title of the Patent</b>	<b>Grant number/application number</b>
1444-1445	IOT based machine for identification of cardiovascular diseases using heart sounds and cardiac cycle (Autralian Patents).	202313352
1444-1445	Injectable dry powder filling machine for pharmaceutical purpose (Intellectual Property India).	388128-001
1444-1445	Modified automatic modular drug delivery device (Intellectual Property India).	390419-001

**Book (s): (limit to recent 3-5 books)**

<b>Year/Duration of Grant</b>	<b>Title of the book published</b>	<b>ISBN no</b>
1444-1445	Pharmacognosy and Phytochemistry,	978-93-5762-114-4
1444-1445	Pharmaceutical Microbiology	9789357621397

**Community service activities (limit to recent 3-5)**

<b>Year/Duration of Grant</b>	<b>Title of the activity</b>	<b>Awarding Body</b>
1444-1445	“Together to achieve your dream”	King Khalid University, Abha, KSA
1444-1445	“Medication campaign”	King Khalid University, Abha, KSA

**Publications: (Include recent publications)**

**Akhtar Atiya**, Barij Nayan Sinha & Uma Ranjan Lal., **2017**. Bioactive phenylpropanoid analogues from *P. betle* leave var. *birkoli*. Natural Product Research <http://dx.doi.org/10.1080/14786419.2017.1285297>

**Akhtar Atiya**, **2017**. A novel resorcinol derivative from the leaves of *Piper betle*. Chemistry of Natural Compounds. <http://link.springer.com/article/10.1007/s10600-017-2070-8>.

**Akhtar Atiya**, Barij Nayan Sinha & Uma Ranjan Lal., **2017**. New chemical constituents from the *Piper betle* Linn. (Piperaceae). Natural Product Research. <http://dx.doi.org/10.1080/14786419.2017.1380018>.

**Akhtar Atiya**, Barij Nayan Sinha & Uma Ranjan Lal., **2018**. The new ether derivative of phenylpropanoid and bioactivity was investigated from the leaves of *Piper betle* L. Natural Product Research. <https://doi.org/10.1080/14786419.2018.1495634>

Sarah Afaq, **Akhtar Atiya**, Arshi Malik, Afaf S. Alwabli, Dhafer A. Alzahrani, Habeeb M. Al-Solami, Othman Alzahrani, Qamre Alam, Mohammad Azhar Kamal, Aala A. Abulfaraj, Alawiah M. Alhebshi, Mohammed Tarique. **2020**. Analysis of methyltransferase (MTase) domain from Zika virus (ZIKV). Bioinformation 16, 229-235. [10.6026/97320630016229](https://doi.org/10.6026/97320630016229).

Javed Masood Khan, Ajamaluddin Malik, Priyankar Sen, Aqeel Ahmad, Anwar Ahmed, **Akhtar Atiya**. **2020**. Deciphering the role of pre-micellar and micellar concentrations of sodium dodecyl benzenesulfonate surfactant in insulin fibrillation at pH 2.0. International Journal of Biological Macromolecules. <https://doi.org/10.1016/j.ijbiomac.2020.01.215>.

**Akhtar Atiya**, Salim A, Sinha BN, Lal UR. **2020**. Two new anticancer phenolic derivatives from the leaves of *Piper betle* Linn. Natural Product Research. <https://doi.org/10.1080/14786419.2020.1762186>.

**Akhtar Atiya**, Taghreed Majrashi, M. Yasmin Begum, Abeer Saad Alqahtani, Amal Saeed Ali Alosman, Amjad Ali Alahmari, Amjad Nasser Mesfer Al Aldabsh, Amjaad Thabit Alshahrani, Rogaih Raja Mohammed Alshahrani: **2021**. Influence of solvent selection and extraction methods on the determination of polyphenols, antioxidant, lipoxygenase and tyrosinase inhibition activities of *Opuntia ficus-indica* fruits peel and pulp collected from the Kingdom of Saudi Arabia (KSA). Natural Product Research. <https://doi.org/10.1080/14786419.2021.1983571>

Begum MY, Alqahtani A, Ghazwani M, Ramakrishna MM, Hani U, **Atiya A**, Rahamathulla M. Preparation of Carbopol 934 Based Ketorolac Tromethamine Buccal Mucoadhesive Film: In Vitro, Ex Vivo, and In Vivo Assessments. International Journal of Polymer Science. 2021 <https://doi.org/10.1155/2021/4786488>.

**Akhtar Atiya.**, Taghreed A. Majrashi., M. Yasmin Begum., Uma R. Lal., Barij N. Sinha., Shaik Fayazuddin Abdul Qadir. **2022.** A Phenylpropanoid Dimer from the leaves of *Piper betle*. Natural Product Research. DOI: [10.1080/14786419.2022.2025594](https://doi.org/10.1080/14786419.2022.2025594).

Mohammad Rafaet Hossain, Malik Abdul Rub, Shamim Mahbub, Akhtar Atiya, Mohammad Majibur Rahman, Abdullah M. Asiri, Md. Anamul Hoque, Mahbub Kabir. **2022.** Impact of ceftriaxone sodium on tetradecyltrimethylammonium bromide & cetyltrimethylammonium bromide mixture: Conductivity and theoretical investigation. Journal of Molecular Liquids. <https://doi.org/10.1016/j.molliq.2022.120707>.

**Akhtar Atiya**, Fahad A. Alhumaydhi, Sharaf E. Sharaf, Waleed Al Abdulmonem, Abdelbaset Mohamed Elsbali, Maher M. Al Enazi, Anas Shamsi, Talha Jawaid, Badrah S. Alghamdi, Anwar M. Hashem, Ghulam Md. Ashraf, Moyad Shahwan. **2022.** Identification of 11-Hydroxytephrosin and Torosafavone A as Potential Inhibitors of 3-Phosphoinositide-Dependent Protein Kinase 1 (PDPK1): Toward Anticancer Drug Discovery. Biology, MDPI. <https://doi.org/10.3390/biology11081230>.

**Akhtar Atiya**, Fahad A. Alhumaydhi, Anas Shamsi, Ahmed Olatunde, Suliman A. Alsagaby, Waleed Al Abdulmonem, Sharaf E. Sharaf, Moyad Shahwan. **2022.** Mechanistic Insight into the Binding of Huperzine a with Human Transferrin: Computational, Spectroscopic and Calorimetric Approaches. ACS Omega. <https://doi.org/10.1021/acsomega.2c03185>.

Arshad Ali Khan, **Akhtar Atiya**, Safia Akhtar, Yogesh Yadav, Kamal A. Qureshi, Mariusz Jaremko, Syed Mahmood. **2022.** Optimization of a Cefuroxime Axetil-Loaded Liquid Self-Nanoemulsifying Drug Delivery System: Enhanced Solubility, Dissolution and Caco-2 Cell Uptake. Pharmaceutics, MDPI. <https://doi.org/10.3390/pharmaceutics14040772>.

**Akhtar Atiya**, Shivani Batra, Taj Mohammad, Nasser M. Alorfi, Waleed Al Abdulmonem, Fahad A. Alhumaydhi, Ghulam Md Ashraf, Saleha S. Baesa, Abdelbaset Mohamed Elsbali, Moyad Shahwan. **2022.** Desmodin and isopongachromene as potential inhibitors of cyclin-dependent kinase 5: phytoconstituents targeting anticancer and neurological therapy. Journal of Biomolecular Structure and Dynamics. <https://doi.org/10.1080/07391102.2022.2128877>.

**Akhtar Atiya**, Abdulrhman Alsayari, Abdullatif Bin Muhsinah, Dalia Almaghaslah, Anwar L. Bilgrami, Waleed Al Abdulmonem, Nasser M. Alorfi, Debarati DasGupta, Ghulam Md. Ashraf, Anas Shamsi, Moyad Shahwan. **2022.** Role of lisinopril in the therapeutic management of cardiovascular disease by targeting microtubule affinity regulating kinase 4: molecular docking and molecular dynamics simulation approaches. Journal of Biomolecular Structure and Dynamics. <https://doi.org/10.1080/07391102.2022.2143425>.

Arshad Ali Khan, Safia Akhtar, Yogesh Yadav, **Akhtar Atiya**, Walla Alelwani, Azzah M. Bannunah, Syed Mahmood. **2022.** Lopinavir-Loaded Self-Nanoemulsifying Drug Delivery System for Enhanced Solubility: Development, Characterisation and Caco-2 Cell Uptake. Current Drug Delivery. <https://doi.org/10.2174/1567201819666220817111054>.

**Akhtar Atiya**, Habiba Shahidi, Taj Mohammad, Sharaf E Sharaf, Waleed Al Abdulmonem, Ghulam, Md Ashraf, Abdel baset Mohamed Elsbali, Salem Hussain Alharethi, Fahad A Alhumaydhi, Saleha Salem Baesa, Mohd Rehan, Anas Shamsi, Moyad Shahwan. **2022.** A virtual screening investigation to identify bioactive natural compounds as potential inhibitors of Cyclin-dependent kinase 9. Journal of Biomolecular Structure and Dynamics. <https://doi.org/10.1080/07391102.2022.2153921>.

**Atiya, A.**, Taghreed Majrashi, Safia Akhtar, Arshad Ali Khan, Afnan Mohammad Sultan Asiri, Hanan Jamaan Al-Zahrana, Raghad Sameer Alnami, Sara Abdulrahman Al sharif, Taef Amer, Zainah Abdullah Faiz, Shimaa Ahmad M AlYahya, Shahad Saeedhabtar. **2022**. The value of Genus *Acacia* in arid and semi-arid environments for the treatment of chronic inflammatory diseases. *Phytomedicine Plus*. <https://doi.org/10.1016/j.phyplu.2022.100315>.

Alrouji, M., DasGupta, D., Ashraf, G.M., Bilgrami, A.L., Alhumaydhi, F.A., Al Abdulmonem, W., Shahwan, M., Alsayari, A., Atiya, A. and Shamsi, A., **2023**. Inhibition of microtubule affinity regulating kinase 4 by an acetylcholinesterase inhibitor, Huperzine A: Computational and experimental approaches. *International Journal of Biological Macromolecules*, 235, p.123831.

<https://doi.org/10.1016/j.ijbiomac.2023.123831>

Majrashi, T.A., Alshehri, S.A., Alsayari, A., Muhsinah, A.B., Alrouji, M., Alshahrani, A.M., Shamsi, A. and **Atiya, A.**, **2023**. Insight into the Biological Roles and Mechanisms of Phytochemicals in Different Types of Cancer: Targeting Cancer Therapeutics. *Nutrients*, 15(7), p.1704. <https://doi.org/10.3390/nu15071704>

**Atiya, A.**, Das Gupta, D., Alsayari, A., Alrouji, M., Alotaibi, A., Sharaf, S.E., Abdulmonem, W.A., Alorfi, N.M., Abdullah, K.M. and Shamsi, A., **2023**. Linagliptin and Empagliflozin Inhibit Microtubule Affinity Regulatory Kinase 4: Repurposing Anti-Diabetic Drugs in Neurodegenerative Disorders Using In Silico and In Vitro Approaches. *ACS omega*, 8(7), pp.6423-6430. <https://doi.org/10.1021/acsomega.2c06634>

Gautam, S., Qureshi, K.A., Jameel Pasha, S.B., Dhanasekaran, S., Aspatwar, A., Parkkila, S., Alanazi, S., **Atiya, A.**, Khan, M.M.U. and Venugopal, D., **2023**. Medicinal Plants as Therapeutic Alternatives to Combat Mycobacterium tuberculosis: A Comprehensive Review. *Antibiotics*, 12(3), p.541. <https://doi.org/10.3390/antibiotics12030541>

Shahwan, M., Hassan, N., Ashames, A., Alrouji, M., Alhumaydhi, F., Al Abdulmonem, W., Muhsinah, A.B., Furkan, M., Khan, R.H., Shamsi, A. and **Atiya, A.**, **2023**. PF543-like compound, a promising sphingosine kinase 1 inhibitor: Structure-based virtual screening and molecular dynamic simulation approaches. *International Journal of Biological Macromolecules*, 245, p.125466. <https://doi.org/10.1016/j.ijbiomac.2023.125466>

Hossain, M.D., Afrin, S., **Atiya, A.**, Anjum, K., Hasan, M.S., Islam, M.R., Hasan, T., Rana, S. and Hoque, M.A., **2023**. Effect of anionic and nonionic hydrotropes on the clouding behavior and thermodynamic properties of nonionic surfactant and ciprofloxacin hydrochloride drug mixture. *Journal of Molecular Liquids*, p.122334. <https://doi.org/10.1016/j.molliq.2023.122334>

Elahi, F., Mahbub, S., Hasan, T., Anjum, K., **Atiya, A.**, Rana, S., Hoque, M.A. and Kabir, M., **2023**. Micelle formation and physico-chemical variables for the sodium dodecyl sulfate/cetylpyridinium chloride and their mixture in aqueous propranolol hydrochloride drug solvent: Conductivity and theoretical analysis. *Journal of Molecular Liquids*, 381, p.121800. <https://doi.org/10.1016/j.molliq.2023.121800>

Alrouji, M., Benjamin, L.S., Alhumaydhi, F.A., Al Abdulmonem, W., Baesa, S.S., Rehan, M., Shahwan, M., Shamsi, A. and **Atiya, A.**, 2023. Unlocking potential inhibitors for Bruton's tyrosine kinase through in-silico drug repurposing strategies. *Scientific Reports*, 13(1), p.17684. | <https://doi.org/10.1038/s41598-023-44956-0>

Subramanian, A., Tamilanban, T., Sekar, M., Begum, M.Y., **Atiya, A.**, Ramachawolran, G., Wong, L.S., Subramanian, V., Gan, S.H., Rani, N.N.I.M. and Wu, Y.S., 2023. Neuroprotective potential of Marsilea quadrifolia Linn against monosodium glutamate-induced excitotoxicity in rats. *Frontiers in Pharmacology*, 14. t: <https://www.researchgate.net/publication/373900630>

Shahwan, M., Hassan, N., Ashames, A., Alrouji, M., Alhumaydhi, F., Al Abdulmonem, W., Muhsinah, A.B., Furkan, M., Khan, R.H., Shamsi, A. and **Atiya, A.**, 2023. PF543-like compound, a promising sphingosine kinase 1 inhibitor: Structure-based virtual screening and molecular dynamic simulation approaches. *International journal of biological macromolecules*, 245, p.125466. <https://doi.org/10.1016/j.ijbiomac.2023.125466>

Alrouji, M., Majrashi, T.A., Alhumaydhi, F.A., Zari, A., Zari, T.A., Al Abdulmonem, W., Sharaf, S.E., Shahwan, M., Anwar, S., Shamsi, A. and **Atiya, A.**, 2023. Unveiling Phytoconstituents with Inhibitory Potential Against Tyrosine-Protein Kinase Fyn: A Comprehensive Virtual Screening Approach Targeting Alzheimer's Disease. *Journal of Alzheimer's Disease*, (Preprint), pp.1-18.

DOI: 10.3233/JAD-230828.

**Atiya, A.**, Muhsinah, A.B., Alrouji, M., Alhumaydhi, F.A., Al Abdulmonem, W., Aljasir, M.A., Sharaf, S.E., Furkan, M., Khan, R.H., Shahwan, M. and Shamsi, A., 2023. Unveiling promising inhibitors of superoxide dismutase 1 (SOD1) for therapeutic interventions. *International Journal of Biological Macromolecules*, 253, p.126684. <https://doi.org/10.1016/j.ijbiomac.2023.126684>

### Conference attendance/presentations:

**AA Khan**, BN Sinha, SP Bhatnagar, Uma R. Lal. 2013. Comparative Study on Chemical Composition of the Essential Oils of *Piper betel* L. Cultivars from north-eastern regions of India. (Abstract No 96) in 3rd Biennial International Conference on New Developments in Drug Discovery from Natural Products and Traditional Medicines at **NIPER, S.A.S Nagar** (Mohali) (**Poster presentation; 2<sup>nd</sup> price**).

**AA Khan**, BN Sinha, SP Bhatnagar, Uma R. Lal. 2014. Antioxidant and antibacterial activities of the extracts of *Piper betle* L. cultivars leaves from eastern zone of India in 2nd Pharm. Tech. IAPST International Conference on New Insights into Diseases and Recent Therapeutic Approaches in Drug Discovery from Natural Products and Traditional Medicines at Department of Pharmaceutical Technology, **Jadavpur University, Kolkata-730032 (Poster presentation)**.

**Akhtar Atiya**, 2016. Quality Improvement Programme organized by Birla Institute of Technology, Dept. of Pharmaceutical Sciences and Technology, Mesra, Ranchi- 835215, Jharkhand, India. Sponsored by All India Council for Technical Education (AICTE), Government of India (**Participated**).

**Akhtar Atiya, 2016.** Intellectual Property Rights Programme organized by Birla Institute of Technology, Mesra, Ranchi- 835215, Jharkhand, India (**Participated**).

**Akhtar Atiya. 2020. Participated** in the two days Conference on “New Horizons in the Pharma Sphere (NHPS 2020)” organized by SVKM’s Institute of Pharmacy, Dhule held on 4 & 5<sup>th</sup> Sept.

**Akhtar Atiya. 2021.** Participated in the one-day webinar on “Overview of Medical Devices Regulations in India” organized by: Indian Pharmacy Graduates’ Association (South Zone) on 1st May, 2021.

**Akhtar Atiya. 2021.** Participated in the one-day webinar on “COVID-19 Vaccines: An Update on Research & Global Availability”. John McConnell | Editor-in-Chief, The Lancet Infectious Diseases (London, United Kingdom).

**Akhtar Atiya. 2021.** Participated in the one-day webinar on “Molecules, advances in separation processes achieved by ionic liquids. 3<sup>rd</sup> June 2021.

**Akhtar Atiya. 2021.** Participated in the one-day conference on Pharma Synth Formulations Limited on May 28, 2021. Indian Pharmacy Graduates’ Association (IPGA).

**Akhtar Atiya. 2021.** Participated in the one-day webinar on “Molecules, new trends on flavonoids in human health”. 31<sup>st</sup> May 2021.

**Akhtar Atiya. 2022.** Participated in the one-day webinar on “Catalysis for clean energy”. 14 December 2022.

**Akhtar Atiya. 2022.** Participated in the one-day webinar on “Med platforms Matter: Emerging strategies for RNA therapeutics”. 14 December 2022.

**Atiya Akhtar Khan. 2023.** “Environment, Pharmacology and Biological Sciences”. 19 February.

**Atiya Akhtar Khan. 2023.** “Computational methods in hit and lead identification/optimization for drug discovery”. 20 & 21 February.

**Atiya Akhtar Khan. 2023.** “Recent advances in health, agriculture and Environmental Sciences”. 28 November.