

Muhammad Ajmal Shah, PhD



Address: Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Government College University Faisalabad 38000, Pakistan.

Tel: +923058265476, +923479203937

E-mail addresses: ajmalshah@gcuf.edu.pk / ajmal.shangla@gmail.com

URLs: <https://profiles.gcuf.edu.pk/profile/ajmalshah>
<https://orcid.org/0000-0003-3471-184X>
<https://publons.com/researcher/1020852/muhammad-ajmal-shah/>
https://www.researchgate.net/profile/Muhammad_Shah22
https://scholar.google.com/citations?user=6kGXd_4AAAAJ&hl=en
<https://www.mendeley.com/profiles/muhammad-ajmal-shah3/>

Academic Qualifications

- **PhD** in Pharmaceutical Sciences from Department of Pharmacognosy & Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Hat-Yai Thailand 2014-2017.
- **MPhil** in Pharmacognosy from Department of Pharmacognosy, Faculty of Pharmacy, Federal Urdu University of Arts, Science & Technology, Karachi Pakistan, 2011-2013.
- **PharmD**, from Faculty of Pharmacy, Federal Urdu University of Arts, Science & Technology, Karachi Pakistan, 2005-2010.

Work Experience

- Currently working as **Assistant Professor** at Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Government College University Faisalabad, Pakistan since 2017.
- **Researcher** at Phytomedicine & Pharmaceutical Biotechnology Excellence Center, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Hat-Yai Thailand, 2014-2017.
- **Assistant Production Manager** at Elko Pharma (Pvt.) Ltd Karachi, 2013-2014.
- **Production Pharmacist** at Wensfeild Pharmaceuticals (Pvt.) Ltd Hattar, 2010 to 2011.
- **Trainee Pharmacist** at Abbot Laboratories (Pakistan) Ltd Karachi, 2010.

Professional Membership

- Society for Medicinal Plant and Natural Product Research, GA (Germany).
- Phytochemical Society of Europe.
- American Society of Pharmacognosy.
- Asian Society of Pharmacognosy.
- American Society of Microbiology.
- Pakistan Society of Microbiology.
- Pakistan Pharmacist Association.
- Biological Safety Association of Pakistan.
- Registered Pharmacist with Pharmacy Council of Pakistan.

Awards & Achievements

1. Thailand Education Hub for ASEAN Countries (TEH-AC) PhD Scholarship 2014-17, granted by Graduate School, Prince of Songkla University Hat-Yai, Songkhla, Thailand.
2. PSU Thesis Support Grant 2016, awarded by Graduate School, Prince of Songkla University Hat-Yai, Songkhla, Thailand.
3. HEC-Pakistan Travel Grant awarded by Higher Education Commission Pakistan to present in the 5th International Mediterranean Symposium on Medicinal and Aromatic Plants & The 5th International Symposium on Pharmaceutical and Biomedical Sciences JOINT MEETING, April 24-28, 2019, Cappadocia, Turkey
4. GA Travel Grant 2017 awarded by GA Society for Medicinal Plant and Natural Product Research Germany to present poster in their 65th GA Annual Meeting at Basel Switzerland, 3-7 September 2017.
5. Faculty Conference Support Grant-2017, awarded by Faculty of Pharmaceutical Sciences, Prince of Songkla University Hat-Yai, Songkhla, Thailand for poster presentation in 2nd International Symposium on Phytochemical in Food and Medicine at Fuzhou China 7-10 April 2017.
6. Faculty Conference Support Grant-2016, awarded by Faculty of Pharmaceutical Sciences, Prince of Songkla University Hat-Yai, Songkhla, Thailand for oral presentation in 4th Current Drug Development Conference, June 1-3 2016, Phuket Thailand.
7. 2nd Best Poster Award in 1st FUUAST Science Symposium 18-20 February 2014, organized by Department of Biochemistry, Federal Urdu University of Arts, Science & Technology Karachi, Pakistan.

Scientific Events Organized

1. Chief organizer, 2nd International Symposium on Pharmaceutical Sciences, "*Innovation and Integration in Pharmaceutical & Biomedical Sciences, Way Forward for Collaboration*" January 30, 2019 at Faculty of Pharmaceutical Sciences, Government College University Faisalabad, Pakistan.
2. Co-organizer, One Day International Workshop on *Current Trends in the Use of Natural Products as Therapeutic Agents*, November 12, 2018 at Department of Pharmacy, Forman Christian College (A Chartered University) Lahore, Pakistan.
3. Organized *Pharmacy Day, 2018* at Department of Pharmacy, May 14, 2018 at Department of Pharmacy, Forman Christian College (A Chartered University) Lahore, Pakistan.
4. Organizer, One Day Workshop on *Current Good Manufacturing Practices (cGMP)*, May 04, 2018 at Department of Pharmacy, Forman Christian College (A Chartered University) Lahore, Pakistan.

Research Expertise & Interests

Bioactive constituent's enriched standardized herbal extract preparation using green approaches, isolation and purification of their marker compounds, *in vitro/in vivo* bio-evaluation and their use in the treatment of aging associated and metabolic diseases such as diabetes, obesity, cancer, Alzheimer's and Parkinson's diseases. Nutraceuticals & cosmeceuticals

Technical Skills & Competences

- Microwave assisted green extraction of bioactive compounds
- Bioactive phytoconstituents enrichment using alternative and green solvents, recyclable and biodegradable resins
- Isolation, purification and structure elucidation of natural products
- Analytical and preparative HPLC

- *In vitro* enzymatic inhibition antidiabetic assays
- *In vitro* cell based antidiabetic and anticancer assays
- Animal handling in antidiabetic, anti-Parkinson's and anti-Alzheimer's studies

Journal Publications

1. Nageen B, Rasul A, Hussain G, **Shah MA***, Anwar H, Hussain SM, Uddin MS, Sarfraz I, Riaz A, Selamoglu Z. Jaceosidin: a natural flavone with versatile pharmacological and biological activities. *Current Pharmaceutical Design*. 2020 (Accepted)
2. Zafar S, Sarfraz I, Rasul A, Shah MA*, Hussain G, Zahoor MK, Shafiq N, Riaz A, Selamoglu Z, Sarker S. Osthole: A Multifunctional Natural Compound with Potential Anticancer, Antioxidant and Anti-inflammatory Activities. *Mini Reviews in Medicinal Chemistry*. 2020 (Accepted)
3. Adnan M, Rasul A, Hussain G, Shah MA, Sarfraz I, Nageen B, Riaz A, Khalid R, Asrar M, Selamoglu Z, Adem S, Sarker S. Physcion and Physcion 8-O- β -glucopyranoside: Natural Anthraquinones with Potential Anti-cancer Activities. *Current Drug Targets*. 2020 (Accepted)
4. Uddin MS, Hossain MF, Al Mamun A, **Shah MA**, Hasana S, Bulbul IJ, Sarwar MS, Mansouri RA, Ashraf GM, Rauf A, Abdel-Daim MM. Exploring the multimodal role of phytochemicals by modulating cellular signal pathways to combat age-related neurodegeneration. *Science of The Total Environment*. 2020 Mar 31:138313.
5. Nawaz J, Rasul A, **Shah MA***, Hussain G, Riaz A, Sarfraz I, Zafar S, Adnan M, Khan AH, Selamoglu Z. Cardamonin: A new player to fight cancer via multiple cancer signaling pathways. *Life Sciences*. 2020 Mar 26:117591.
6. Sarfraz A, Javeed M, **Shah MA***, Hussain G, Shafiq N, Sarfraz I, Riaz A, Sadiqa A, Zara R, Zafar S, Kanwal L. Biochanin A: A novel bioactive multifunctional compound from nature. *Science of the Total Environment*. 2020 Mar 12:137907.
7. Uddin MS, Kabir MT, Rahman MM, Mathew B, **Shah MA**, Ashraf GM. TV 3326 for Alzheimer's dementia: a novel multimodal ChE and MAO inhibitors to mitigate Alzheimer's-like neuropathology. *Journal of Pharmacy and Pharmacology*. 2020 Mar 9.
8. Shehzad A, Saleem U, **Shah MA**, Vargas-de la Cruz C, Khan AH, Ahmad B. Antiuro lithic evaluation of *Cucurbita pepo* seeds extract against sodium oxalate-induced renal calculi. *Pharmacognosy Magazine*. 2020 Mar 1;16(68):174.
9. Sarfraz I, Rasul A, Hussain G, **Shah MA**, Zahoor AF, Asrar M, Selamoglu Z, Ji XY, Adem Ş, Sarker SD. 6-Phosphogluconate dehydrogenase fuels multiple aspects of cancer cells: From cancer initiation to metastasis and chemoresistance. *BioFactors*. 2020 Feb 10.
10. Sheikh FA, Aamir MN, **Shah MA**, Ali L, Anwer K, Javaid Z. Formulation design, characterization and in vitro drug release study of orodispersible film comprising BCS class II drugs. *Pakistan Journal of Pharmaceutical Sciences*. 2020 Jan 1; 33:343-53.
11. Yeung AW, Orhan IE, Aggarwal BB, Battino M, Belwal T, Bishayee A, Daglia M, Devkota HP, El-Demerdash A, **Shah MA**, Balacheva AA, Georgieva MG. Berberine, a popular dietary supplement for human and animal health: Quantitative research literature analysis—a review. *Animal Science Papers & Reports*. 2020 Jan 1; 38(1).
12. Naz S, Zafar M, Ahmad M, Memon RA, Sultana S, Bahadur S, Ozdemir FA, Siddiq Z, Shah MA. Palynological investigation of lactiferous flora (Apocynaceae) of District Rawalpindi, Pakistan, using light and scanning electron microscopy. *Microscopy research and technique*. 2019 Sep; 82(9):1410-8.
13. Kumar R, Harilal S, Gupta SV, Jose J, Uddin MS, **Shah MA**, Mathew B. Exploring the new horizons of drug repurposing: A vital tool for turning hard work into smart work. *European Journal of Medicinal Chemistry* 2019, 8:111602.

14. Samsuzzaman M, Uddin MS, **Shah MA**, Mathew B. Natural inhibitors on airway mucin: Molecular insight into the therapeutic potential targeting MUC5AC expression and production. *Life sciences*. 2019 May 19.
15. Orhanc OK, Barrecae MB, Belwalg AB, **Shah MA**, Dagliaam HP, Echeverriak AE, Balachevan MG. Resveratrol, a popular dietary supplement for human and animal health: Quantitative research literature analysis-a review. *Animal Science Papers and Reports* 2019; 37(2):103-18.
16. **Shah MA**, Khalil R, Haq ZU, Reanmongkol W, Panichyupakaranant P. Anti-hyperglycemic and anti-hyperlipidemic effects of rhinacanthins-rich extract from *Rhinacanthus nasutus* leaves in nicotinamide-streptozotocin induced diabetic rats. *Biomedicine & Pharmacotherapy*, 2019, 113, 108702.
17. Chauhdary Z, Saleem U, Ahmad B, Shah S and **Shah MA***. Neuroprotective evaluation of *Tribulus terrestris* L. in aluminum chloride induced Alzheimer's disease. *Pakistan Journal of Pharmaceutical Sciences*, 2019, 32(2):805-816
18. Zhao LL, Makinde EA, **Shah MA**, Olatunji OJ, Panichayupakaranant P. Rhinacanthins-rich extract and rhinacanthin C ameliorate oxidative stress and inflammation in streptozotocin-nicotinamide-induced diabetic nephropathy. *Journal of Food Biochemistry*, 2019, e12812.
19. **Shah MA**, Panichyupakaranant P. Antidiabetic naphthoquinones and their plant resources in Thailand. A Review. *Chemical and Pharmaceutical Bulletin*. 2018, 66(5):483-492.
20. **Shah MA**, Khalil R, Haq ZU, Panichyupakaranant P. α -Glucosidase inhibitory effect of rhinacanthins-rich extract from *Rhinacanthus nasutus* leaf and synergistic effect in combination with acarbose. *Journal of Functional Foods*. 2017, 36:325-331
21. **Shah MA**, Muhammad H, Mehmood Y, Khalil R, Haq ZU, Panichyupakaranant P. Superoxide scavenging and antiglycation activities of rhinacanthins-rich extract from *Rhinacanthus nasutus* leaves. *Pharmacognosy Magazine*. 2017, 13:652-658
22. **Shah MA**, Jakkawanpitak C, Decha S, Panichyupakaranant P. Rhinacanthins-rich extract enhance glucose uptake and inhibit adipogenesis in 3T3-L1 adipocytes and L6 myotubes. *Pharmacognosy Magazine*. 2017, 13(4):S817-S821.
23. Khan I, **Shah MA**, Sualeh M, Mehmood F, Saeed A. Determination and identification of Enterobacteriaceae in street vended foods in Karachi, Pakistan. *Pakistan Journal of Nutrition*, 2015, 14:225-228
24. Sabir S, Tahir K, Rashid N, Naz S, Masood B, Shah MA, Sualeh M. Phytochemical and antioxidant studies of *Berberis lycium*. *Pakistan Journal of Pharmaceutical Sciences*. 2013 Nov 1;26(6):1165-72.
25. Sabir S, Tahir K, Rashid N, Naz S, Masood B, **Shah MA**, Sualeh M. Phytochemical and antioxidant studies of *Berberis lycium*. *Pakistan Journal of Pharmaceutical Sciences*, 2013, 26:1165-1172
26. Sherwani SK, Khan MM, Zubair A, **Shah MA**, Kazmi SU. Evaluation of *in vitro* thrombolytic activity of *Bougainvillea spectabilis* leaf extract. *International Journal of Pharmaceutical Sciences Review & Research*, 2013, 21:6-8.
27. Sherwani SK, Irshad A, **Shah MA**, Ajaz M Ahmad H. Antibiotic resistance issues in clinical pathogens: A Review. *International Journal of Pharmaceutical Sciences & Research*, 2013, 4:1725-1729.
28. **Shah MA**, Sherwani SK, Sualeh M, Kanwal S, Khan HN, Kazmi SU. *In vitro* anthelmintic and antiurolithic assessment of *Berberis lycium* root bark. *Journal of Pharmacognosy and Phytochemistry* 2014;3 :205-210

*Corresponding author | Manuscripts submitted (7)

Book Chapters

1. Blundell R, Azzopardi J, Briffa J, Rasul A, Vargas-de la Cruz C, **Shah MA***. Analysis of pentaterpenoids. In *Recent Advances in Natural Products Analysis* 2020 Jan 1 (pp. 457-475). Elsevier.

2. Shah I, **Shah MA***, Nawaz MA, Pervez S, Noreen N, Vargas-de la Cruz C, Khan F, Blundell R, Briffa J, Azzopardi J, Niaz K. Analysis of other phenolics (capsaicin, gingerol, and alkylresorcinols). In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 255-271). Elsevier.
3. Niaz K, Khan F, **Shah MA***. Analysis of quinonoids. In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 749-766). Elsevier.
4. **Shah MA**, Niaz K, Aslam N, Vargas-de la Cruz C, Kabir A, Khan AH, Khan F, Panichayupakaranant P. Analysis of proteins, peptides, and amino acids. In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 723-747). Elsevier.
5. Niaz K, Khan F, **Shah MA***. Analysis of carbohydrates (monosaccharides, polysaccharides). In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 621-633). Elsevier.
6. Bule M, Issa IA, Khan F, **Shah MA***, Niaz K. Development of new food products based on phytonutrients. In *Phytonutrients in Food 2020 Jan 1* (pp. 197-216). Elsevier.
7. Niaz K, **Shah MA***, Khan F, Saleem U, Vargas C, Panichayupakaranant P. Bioavailability and safety of phytonutrients. In *Phytonutrients in Food 2020 Jan 1* (pp. 117-136). Elsevier.
8. Bule M, **Shah MA***, Abdurahman AA, Ullah MS, Shah S, Amin A, Niaz K. Diet and Nutrition in Alzheimer's Disease and Healthy Aging. In *Biological, Diagnostic and Therapeutic Advances in Alzheimer's Disease 2019* (pp. 53-70). Springer, Singapore.

*Corresponding author | Chapters submitted (7)

Book Editor

Stanley C. Udedi, Jonathan C. Ifemeje, Chukwuebuka Egbuna, **Muhammad Ajmal Shah**, Kingsley C. Patrick-Iwuanyanwu and Azhar Rasul. *Research methods in biosciences: the state-of-the-arts methods and applications*. Elsevier (In process)

Editorial

- Pakistan Journal of Pharmaceutical Sciences (Pakistan)
- Medical Technologies Journal (Algeria)

Reviewer

- Science of the Total Environment
- Oxidative Medicine and Cellular Longevity
- Ecotoxicology and Environmental Safety
- World Journal of Surgical Oncology
- Current Protein & Peptide Science
- Pharmacognosy Magazine (Wolters Kluwer)
- Pharmaceutical Analysis (Wiley Online)
- Medicina (MDPI)
- Current Research in Nutrition and Food Science Journal
- BAOJ Pharmaceutical Sciences
- Biomedical and Pharmacology Journal
- Environmental Science and Pollution Research

MPhil/PhD Supervision

Sr. No.	Name (Session)	Registration	Thesis Title	Role as	Status
01	Ms Irum Naz (PhD, 2016-19)	2005-GCUF-2797-520	Chemical Characterization and Bio-Evaluation of Berberidaceae Family for their Therapeutic Potential	Supervisor-II	In progress
02	Nazia Kanwal (2017-2020)	2017-GCUF-01680	In vitro and In vivo evaluation of mushroom-derived natural Compounds against Human liver cancer	Supervisor-II	In progress
02	Nazir Ahmad (MPhil, 2017-19)	2017-GCUF-01584	Pharmacological Evaluation of <i>Salvia Hispanica</i> Seeds for Anti-Urolithiatic Activity	Supervisor-II	Completed
03	Iqra Mubeen (MPhil, 2017-19)	2013-GCUF-08820	Phytochemical Screening of <i>Solanum Surattanese</i> Collected from Cholistan Desert of Bahawalpur, Pakistan	Supervisor-II	Completed
04	Robina Akhtar (MPhil, 2017-19)	2017-GCUF-02427	Effect of Methanol Extract of <i>Malva Neglecta</i> on Memory Impairment in Alzheimer's Disease	Supervisor-II	Completed
05	Nimra Javed (MPhil, 2017-19)	2017-GCUF-02782	Anti-Parkinson Activity of Ethanol Extract of <i>Brassica Juncea</i> Leaves	Supervisor-II	Completed
06	Zunaira Hamid (MPhil, 2017-19)	2013-GCUF-01853	SNP Analysis of CETP and its Impact on Response to Fibrate Therapy in Hypertriglyceridemic patients	Supervisor-II	Completed
07	Somia Irshad (MPhil, 2018-20)	2018-GCUF-11239	Evaluation of Cytotoxic Potential of Rhinacanthin Rich Extract and its Marker Compounds Against Human Breast Cancer (MCF-7) Cells	Supervisor-II	In progress
08	Qurat-ul-Ain (MPhil, 2017-19)	2013-GCUF-02634	SNP of HMGCR and its Impact in Response to Statin Therapy in Hypercholesteraemic Patients	Member	Completed