

## Muhammad Ajmal Shah, PhD

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### 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 (Grade “X” (Excellent)).
- **MPhil** in Pharmacognosy from Department of Pharmacognosy, Faculty of Pharmacy, Federal Urdu University of Arts, Science & Technology, Karachi Pakistan, 2011-2013 (CGPA 3.5/4.00).
- **PharmD (Doctor of Pharmacy)**, from Faculty of Pharmacy, Federal Urdu University of Arts, Science & Technology, Karachi Pakistan, 2005-2010 (CGPA 3.60/4.00).

### Work Experiences

I have **total 11 year experience with post PhD 4 year** in the following capacities at different private and public sector organizations:

- A. Currently working as **Assistant Professor & Teacher Incharge** at Department of Pharmacognosy, Faculty of Pharmaceutical Sciences, Government College University Faisalabad (GCUF), since 2018.

### Achievements

1. Approval of first Board of Studies (BOS) of Department of Pharmacognosy GCUF.
2. Supervision of teaching and research activities at Department of Pharmacognosy GCUF.

3. Handling of financial and purchasing matters of Department of Pharmacognosy GCUF.
4. Organized (as chief organizer) different workshops and an international symposium at Department of Pharmacognosy GCUF.
5. Teaching natural products, functional foods and herbal medicine related courses both at undergrad and postgrad level.

**B. Manager External Linkages** at Office of Research, Innovation & Commercialization (ORIC), Government College University Faisalabad, Pakistan since 2019.

**Achievements**

1. MoU between GCUF and Kilis 7 Aralık University Turkey under Pak-Turk Mevalana Exchange Program.
2. MoU between GCUF and Universiti Malaysia Pahang Malaysia.

**C. Assistant Professor** at Department of Pharmacy, Forman Christian College University, Lahore, Pakistan, 2017-2018.

**Achievements**

1. Teaching and research of natural products, functional foods and herbal medicines related courses on undergrad and postgrad level.
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. **Organizer**, *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.

**D. Researcher/PhD Scholar** at Phytomedicine & Pharmaceutical Biotechnology Excellence Center, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Hat-Yai Thailand, 2014-2017.

**E. Pharmacist/Research Officer** at Elko Pharmaceuticals (Pvt.) Ltd Karachi, 2010 to 2014.

**F. Trainee Pharmacist** at Abbot Laboratories (Pakistan) Ltd Karachi, 2010.

## 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 for their use in the treatment of aging associated and metabolic diseases such as diabetes, obesity, cancer, Alzheimer's and Parkinson's diseases.
- Green preparation, standardization and commercialization of nutraceuticals and natural cosmeceuticals

## Technical Skills & Competences

- Microwave assisted green extraction of bioactive compounds
- Bioactive phytoconstituents enrichment using green solvents, recyclable and biodegradable resins
- Isolation and purification of phytochemicals using conventional column chromatography and HPLC
- *In vitro* enzymatic inhibition and cell based antidiabetic, antiobesity and neuroprotective assays
- Experimental animals handling in antidiabetic, antiobesity and neuroprotective/behavioral studies
- Formulation and standardization of nutraceuticals and herbal products

## Journal Publications

I have total 67 publications with cumulative **impact factor >220, citations >670, h-index 16 and i10 index 25**

1. Albutti A, Gul MS, Siddiqui MF, Maqbool F, Adnan F, Ullah I, Rahman Z, Qayyum S, **Shah MA**, Salman M. Combating Biofilm by Targeting Its Formation and Dispersal Using Gallic Acid against Single and Multispecies Bacteria Causing Dental Plaque. *Pathogens*. 2021 Nov; 10(11):1486. **(Q2, IF 3.49)**
2. Aziz E, Batoool R, Akhtar W, Shahzad T, Malik A, **Shah MA**, Iqbal S, Rauf A, Zengin G, Bouyahya A, Rebezov M. Rosemary species: a review of phytochemicals, bioactivities and industrial applications. *South African Journal of Botany*. 2021 Oct 8. **(Q2, IF 2.31)**
3. Maliyakkal N, Saleem U, Anwar F, **Shah MA**, Ahmad B, Umer F, Almoyad MA, Parambi DG, Beeran AA, Nath LR, Aleya L. Ameliorative effect of ethoxylated chalcone-based MAO-B inhibitor on behavioural predictors of haloperidol-induced Parkinsonism in mice: evidence of its antioxidative role against Parkinson's diseases. *Environmental Science and Pollution Research*. 2021 Sep 2:1-2 **(Q2, IF 4.23).**

4. Iqbal S, Jabeen F, Chaudhry AS, **Shah MA**. Nickel nanoparticles induce hepatotoxicity via oxidative and nitrative stress-mediated apoptosis and inflammation. *Toxicology and Industrial Health*. 2021, 1–17 (**Q3, IF 2.27**).
5. Akbar M, Shabbir A, Rehman K, Akash MS, **Shah MA**. Neuroprotective potential of berberine in modulating Alzheimer's disease via multiple signaling pathways. *Journal of Food Biochemistry*: e13936 (**Q3, IF 2.72**).
6. Sarfraz I, Rasul A, Hussain G, **Shah MA\***, Nageen B, Jabeen F, Selamoğlu Z, Uçak İ, Asrar M, Adem S. A review on phyto-pharmacology of *Oxalis corniculata*. *Combinatorial Chemistry & High Throughput Screening*. 2021 Aug 13. (**Q3, IF 1.2**)
7. Batiha GE-S, Alqarni M, Awad DAB, Algammal AM, Nyamota R, Wahed MII, **Shah MA**, Amin MN, Adetuyi BO, Hetta HF, Cruz-Martins N, Koirala N, Ghosh A, Echeverría J, Pagnossa JP and Sabatier J-M (2021) Dairy-Derived and Egg White Proteins in Enhancing Immune System Against COVID-19. *Frontiers in Nutrition* 8:629440 (**Q2, IF 6.576**).
8. Saleem U, Akhtar R, Anwar F, **Shah MA**, Chaudary Z, Ayaz M, Ahmad B. Neuroprotective potential of *Malva neglecta* is mediated via down-regulation of cholinesterase and modulation of oxidative stress markers. *Metabolic Brain Disease*. 2021 Feb 11:1-2 (**Q2, IF 3.58**).
9. Khalil AAK, Qazi AS, Ahn MJ, **Shah MA\***, Ahmed MS, Sajjad W, Ali T, Shah FA, Khan MTA, Roman M, Roman M, Rehman SU, Naeem M, Haider A, Noor R. 2-Methoxy-6-acetyl-7-methyljuglone: A bioactive phytochemical and potential cancer killer *via* multiple cellular signaling pathways. *Anti-cancer Agents in Medicinal Chemistry*. 2021- Accepted- (**Q3, IF 2.50**).
10. Magdy Beshbishy A, Oti VB, Hussein DE, Rehan IF, Adeyemi OS, Rivero-Perez N, Zaragoza-Bastida A, **Shah MA**, Abouelezz K, Hetta HF, Cruz-Martins N and Batiha G-S. Factors behind the Higher COVID-19 Risk in Diabetes: A Critical Review. *Frontiers in Public Health*. 2021 9:591982. (**Q2, IF 3.70**).
11. Saleem U, Hira S, Anwar F, **Shah MA\***, Bashir S, Baty RS, Badr RH, Blundell R, Batiha GE-S and Ahmad B. Pharmacological Screening of *Viola odorata* L. for Memory-Enhancing Effect *via* Modulation of Oxidative Stress and Inflammatory Biomarkers. *Frontiers in Pharmacology*. 2021 12:664832 (**Q1, IF 5.81**).
12. Adnan M, Rasul A, Shah MA, Hussain G, Asrar M, Riaz A, Sarfraz I, Hussain A, Khorsandi K, Lai NS, Hussain SM. Radioprotective role of natural polyphenols: From sources to mechanisms. *Anti-Cancer Agents in Medicinal Chemistry*. 2021-Accepted (**Q2, IF 2.50**)
13. Ali S, Chen X, **Shah MA**, Ali M, Zareef M, Arslan M, Ahmad S, Jiao T, Li H, Chen Q. The avenue of fruit wastes to worth for synthesis of silver and gold nanoparticles and their

- antimicrobial application against foodborne pathogens: A review. *Food Chemistry*. 2021 Apr 20:129912 (**Q1, IF 7.51**).
14. Iqbal S, Jabeen F, Chaudhry AS, **Shah MA**, Batiha GES. Toxicity assessment of metallic nickel nanoparticles in various biological models: An interplay of reactive oxygen species, oxidative stress, and apoptosis. *Toxicology and Industrial Health*. 2021, 1–17 (**Q3, IF 2.27**).
  15. Kanwal N, Rasul A, **Shah MA**, Jabeen F, Sultana T. In silico-based identification of phytochemicals as novel human phosphoglycerate mutase 1 (PGAM1) inhibitors for cancer therapy. *Pakistan Journal of Pharmaceutical Sciences*. 2021 doi.org/10.36721/PJPS.0000.00.0.SUP.000-000.1 (**Q2, IF 0.68**).
  16. **Shah MA\***, Rasul A, Yousaf R, Haris M, Faheem HI, Hamid A, Khan H, Khan AH, Michael Aschnar M, Batiha GES. Combination of natural antivirals and potent immune invigorators: A natural remedy to combat COVID-19. *Phytotherapy Research*. 2021-Accepted-(**Q2, IF 5.87**)
  17. Waheed A, Ahmad M, Ghufra MA, Jabeen A, Ozdemir FA, Zafar M, Sultana S, **Shah MA**, Majeed S, Khan AS. Implication of scanning electron microscopy in the seed morphology with special reference to three subfamilies of Fabaceae. *Microscopy Research and Technique*. 2021 Apr 8.(**Q2, IF 2.67**)
  18. Saleem U, Shehzad A, Shah S, Raza Z, **Shah MA\***, Bibi S, Chaudhry Z, Ahmad B. Antiparkinsonian activity of *Cucurbita pepo* seeds along with possible underlying mechanism. *Metabolic Brain Disease*. 2021 Mar 24:1-21 (**Q2, IF 3.58**).
  19. Saleem M, Khalid I, Akhtar MF, Saleem A, Rasul A, Hamid I, Shah MA, Basheer E, Javaid Z, Sohail K. HPLC analysis and pharmacological study of *Quercus dilatata* Lindl. ex Royle aqueous methanolic extract in Sprague Dawley rats. *Pakistan Journal of Pharmaceutical Sciences*. 2020 Jun 10 (**Q2, IF 0.68**).
  20. Iqbal S, **Shah MA\***, Rasul A, Saadullah M, Tabassum S, Ali S, Zafar M, Muhammad H, Uddin MS, Batiha GE, Vargas-De-La-Cruz C. Radioprotective Potential of Nutraceuticals and their Underlying Mechanism of Action. *Anti-cancer Agents in Medicinal Chemistry*. 2021 Feb 22 (**Q3, 2.50**).
  21. Saleem U, Gull Z, Saleem A, **Shah MA**, Akhtar MF, Anwar F, Ahmad B, Panichayupakaranant P. Appraisal of anti-Parkinson activity of rhinacanthin-C in haloperidol-induced parkinsonism in mice: A mechanistic approach. *Journal of Food Biochemistry*. 2021 Mar 12:e13677 (**Q3, IF 2.72**).

22. Batoool R, Rasul A, Hussain G, **Shah MA\***, Nageen B, Sarfraz I, Zahoor MK, Riaz A, Ajaz A, Adem Ş. Furanodiene: A novel, potent and multitarget cancer-fighting terpenoid. *Current Pharmaceutical Design*. 2021 Feb 11 (**Q2, IF 3.11**).
23. Kaur G, Behl T, Bungau S, Kumar A, Uddin MS, Mehta V, Zengin G, Mathew B, **Shah MA**, Arora S. Dysregulation of the Gut-Brain Axis, Dysbiosis and Influence of numerous factors on Gut Microbiota associated Parkinson's Disease. *Current Neuropharmacology*. 2020 Jun 6 (**Q1, IF 7.36**).
24. Asghar A, Aamir MN, **Shah MA**, Syed SK, Munir R. Development, characterization and evaluation of *in vitro* anti-inflammatory activity of *Withania coagulans* extract and extract loaded microemulsion. *Pakistan Journal of Pharmaceutical Sciences*. 2021 Jan 1; 34(1):473-9 (**Q2, IF 0.68**).
25. Hetta HF, Meshaal AK, Algammal AM, Yahia R, Makharita RR, Marraiki N, **Shah MA**, Hassan HA, Batiha GE. *In-vitro* Antimicrobial activity of essential oils and spices powder of some medicinal plants against *Bacillus* species isolated from raw and processed meat. *Infection and Drug Resistance*. 2020; 13:4367. (**Q1, IF 4.00**)
26. Saleem U, Ahmad N, **Shah MA**, Anwar F, Ahmad B. Anti-urolithiatic activity of *Salvia hispanica* L. seeds in ethylene glycol induced urolithiasis rat's model. *Anais da Academia Brasileira de Ciências*. 2020; 92(4) (**Q1, IF 1.75**).
27. Javaid N, **Shah MA\***, Rasul A, Chauhdary Z, Saleem U, Khan H, Ahmed N, Uddin MS, Mathew B, Behl T, Blundell R. Neuroprotective effects of ellagic acid in Alzheimer's disease: Focus on underlying molecular mechanisms of therapeutic potential. *Current Pharmaceutical Design*. 2020 Nov 12. (**Q2, IF 3.11**)
28. Parambi DGT, Saleem U, **Shah MA**, Anwar F, Ahmad B, Manzar A, Itzaz A, Harilal S, Uddin MS, Kim H, Bijo Mathew. Exploring the therapeutic potentials of highly selective oxygenated chalcone based MAO-B inhibitors in a haloperidol-induced Murine model of Parkinson's disease. *Neurochemical Research* (2020) (**Q1, IF 3.96**)
29. 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- $\beta$ -glucopyranoside: Natural Anthraquinones with Potential Anti-cancer Activities. *Current Drug Targets*. 2020 (**Q2, IF 3.46**)
30. Zafar M, Ahmad M, Shah GM, Khan AM, Kilic O, Yilmaz E, Ozdemir FA, Ali MI, Shah MA, Sultana S, Ahmad S. Application and implication of scanning electron microscopy for evaluation of palyno-morphological features of Vitaceae from Pakistan. *Microscopy Research and Technique*. 2021 Apr; 84(4):608-17 (**Q2, IF 2.76**).

31. Mathew B, Harilal S, Musa A, Kumar R, Parambi DG, Jose J, Uddin MS, **Shah MA**, Behl T, Unnikrishnan MK. An Agathokakological tale of  $\Delta$  9-THC: Exploration of Possible Biological Targets. *Current Drug Targets*. 2020 Oct 1 (**Q2, IF 3.46**).
32. Alam W, Khan H, Shah MA, Cauli O, Saso L. Kaempferol as a dietary anti-Inflammatory agent: Current therapeutic standing. *Molecules*. 2020 Jan; 25(18):4073 (**Q1, IF 4.41**)
33. Magdy Beshbishy A, Hetta HF, Hussein DE, Saati AA, C Uba C, Rivero-Perez N, Zaragoza-Bastida A, **Shah MA**, Behl T, Batiha GE. Factors associated with increased morbidity and mortality of obese and overweight COVID-19 patients. *Biology*. 2020 Sep; 9(9):280 (**Q1, IF 5.07**)
34. Adnan M, Rasul A, Hussain G, **Shah MA\***, Zahoor MK, Anwar H, Sarfraz I, Riaz A, Manzoor M, Adem Ş, Selamoglu Z. Ginkgetin: A natural biflavone with versatile pharmacological activities. *Food and Chemical Toxicology*. 2020 Aug 9:111642 (**Q1, IF 6.02**)
35. Sarfraz A, Rasul A, Sarfraz I, **Shah MA\***, Hussain G, Shafiq N, Masood M, Adem Ş, Sarker SD, Li X. Hispolon: A natural polyphenol and emerging cancer killer by multiple cellular signaling pathways. *Environmental Research*. 2020 Aug 6:110017 (**Q1, IF 6.49**).
36. Riaz A, Rasul A, Kanwal N, Hussain G, Shah MA, Sarfraz I, Ishfaq R, Batool R, Rukhsar F, Adem Ş. Germacrone: A potent secondary metabolite with therapeutic potential in metabolic diseases, cancer and viral infections. *Current Drug Metabolism*. 2020 (**Q2, IF 3.73**).
37. 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 (**Q1, IF 7.96**)
38. Ali L, Ahmad M, Aamir MN, Minhas MU, Shah HH, **Shah MA**. Cross-linked pH-sensitive pectin and acrylic acid based hydrogels for controlled delivery of metformin. *Pakistan Journal of Pharmaceutical Sciences*. 2020 Jul 1;33(4) (**Q2, IF 0.68**)
39. Kanwal N, Rasul A, Hussain G, Anwar H, **Shah MA\***, Sarfraz I, Riaz A, Batool R, Shahbaz M, Hussain A, Selamoglu Z. Oleandrin: A bioactive phytochemical and potential cancer killer via multiple cellular signaling pathways. *Food and Chemical Toxicology*. 2020 Sep 1;143:111570 (**Q1, IF 6.02**)
40. Saadullah M, Asif M, Sattar A, Rehman K, Shah S, Saleem M, **Shah MA**, Wajid M, Rasool A, Uzair M, Afzal S. Cytotoxic and antioxidant potentials of ellagic acid derivatives from *Conocarpus lancifolius* (Combretaceae). *Tropical Journal of Pharmaceutical Research*. 2020 May;19 (5):1073-80 (**Q3, IF 0.53**)

41. 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 (**Q2, IF 0.68**)
42. Shah S, Abbas G, Rehman AU, Chauhdary Z, Javed S, Aslam A, **Shah MA**, Rashid Khan M, Kazmi A, Noureen S. Exploring the knowledge and self-prescription with antibiotics in Punjab, Pakistan. *Latin American Journal of Pharmacy*. 2020 Jan 1; 39(5):869-73 (**Q3, IF 0.24**)
43. Shehzad A, Saleem U, **Shah MA**, Vargas-de la Cruz C, Khan AH, Ahmad B. Antiurolithic evaluation of *Cucurbita pepo* seeds extract against sodium oxalate-induced renal calculi. *Pharmacognosy Magazine*. 2020 Mar 1; 16(68):174 (**Q2, IF 1.08**)
44. 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 Apr 28 (**Q2, IF 3.11**)
45. 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 (**Q1, IF 5.03**)
46. Maheen S, Rasul A, Khan HU, Shah MA, Saadullah M, Siddiqui FA, Afzal S, Afzal K, Sharif M. Development and Validation of a Sensitive HPLC Method for the Simultaneous Estimation of Saxagliptin and Enalapril in Human Plasma. *Latin American Journal of Pharmacy*. 2020 Jan 1; 39(7):1239-85 (**Q3, IF 0.24**).
47. 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 (**Q1, IF 7.96**)
48. 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 (**Q2, IF 3.76**)
49. 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 Jul 9 (**Q2, IF 3.86**)
50. 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 (**Q1, IF 6.11**)
51. 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 et al., 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) (**Q2, IF 1.07**)
52. Shah S, Rasul A, Rasul A, Saadullah M, Asad Abrar M, Afzal Z, Rashid Khan M, Hanif M, Abbas G, Anwaar-Ul-Hassan Chughtai M. Sensitive and Inexpensive HPLC Method for Combined Monitoring of Metformin and Sitagliptin in Plasma. *Latin American Journal of Pharmacy*. 2019 Jan 1; 38(9):1874-8 (**Q3, IF 0.24**).
  53. 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 (**Q1, IF 5.03**).
  54. 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 (**Q1, IF 6.51**).
  55. Yeunga AWK, Aggarwal BB, Orhanc OK, Barrecae MB, Belwalg AB, **Shah MA**, Dagliaam HP, Echeverriak AE, Balachevan MG et al., 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 (**Q2, IF 1.07**).
  56. 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 (**Q2, IF 2.76**).
  57. **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 (**Q1, IF 6.52**).
  58. 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 (**Q2, IF 0.68**).
  59. 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 (**Q3, IF 2.72**).
  60. **Shah MA**, Panichyupakaranant P. Antidiabetic naphthoquinones and their plant resources in Thailand. A Review. *Chemical and Pharmaceutical Bulletin*. 2018, 66(5):483-492 (**Q2, IF 1.64**).

61. **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 (**Q2, IF 1.08**).
62. **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 (**Q2, IF 1.08**).
63. **Shah MA**, Khalil R, Haq ZU, Panichyupakaranant P.  $\alpha$ -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 (**Q1, IF 4.45**).
64. Khan I, **Shah MA\***, Mehmood FS, Saeed A, Sualeh M. Determination and identification of Enterobacteriaceae in street vended foods in Karachi, Pakistan. *Pakistan Journal of Nutrition*. 2015 Apr 1; 4(4):225 (**Q3, Scopus**)
65. Asghar A, Aamir MN, **Shah MA**, Syed SK, Munir R. Development, characterization and evaluation of *in vitro* anti-inflammatory activity of *Withania coagulans* extract and extract loaded microemulsion. *Pakistan Journal of Pharmaceutical Sciences*. 2021, 34(1), 473-479 (**Q2, IF 0.68**).
66. 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(6):1165-72 (**Q2, IF 0.68**).
67. 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 (**Q3, Scopus and ISI**).

\*Corresponding author | Manuscripts submitted (10)

## Patent

Green preparation of berberine-rich extract and its bioequivalent studies to be used as a phytopharmaceutical alternative of commercial/synthetic berberine. Submitted to Pakistan Patent Office- August 2021

## Research Grant

**Co-PI** of Project “Development of herbal supplements for diabetes and low-cost nanomaterial-based wound dresser using green technology for diabetic foot ulcers” Rs. 6,500,000 (Six Million Five

Hundred Thousand) under Punjab Innovation & Research Challenge Award 2020-21 (PIRCA) by Punjab Higher Education Commission, Pakistan.

### Conference Publications

1. **Shah MA**, Reanmongkol W, Panichyupakaranant P. *In vivo* antidiabetic activity of rhinacanthins enriched extract prepared by microwave assisted green extraction process. The 5<sup>th</sup> International Mediterranean Symposium on Medicinal and Aromatic Plants & The 5<sup>th</sup> International Symposium on Pharmaceutical and Biomedical Sciences JOINT MEETING, April 24-28, 2019, **Cappadocia, Turkey. (Oral)**
2. **Shah MA**, Haji M, Khalil R, Haq ZU, Panichyupakaranant P. Rhinacanthins-rich extract: A potent superoxide scavenger and advanced glycation end-product formation inhibitor. 65<sup>th</sup> GA Annual Meeting, September 3-7, 2017, **Basel, Switzerland. (Proceedings published in Planta Medica) (Poster)**
3. **Shah MA**, Decha S, Khalil R, Haq ZU, Panichayupakaranant P. Rhinacanthins-rich extract: A potent synergistic  $\alpha$ -glucosidase inhibitor and glucose uptake enhancer in muscles cells. 2<sup>nd</sup> International Symposium on Phytochemicals in Food and Medicine, April 7-10, 2017, **Fuzhou, China. (Proceedings published in Chinese Medicine) (Poster)**
4. **Shah MA**, Panichyupakaranant P.  $\alpha$ -Glucosidase inhibitory effect of rhinacanthins-rich extract and rhinacanthin-C. 4<sup>th</sup> Current Drug Development Conference, June 1-3, 2016, **Phuket, Thailand. (Oral)**
5. **Shah MA**, SK Sherwani, Sualeh M, Urooj S, Ali H, Kazmi SU. *In ovo* antiviral evaluation of *Berberis lycium* root bark's aqueous extracts. 50<sup>th</sup> Annual Medical Symposium of Jinnah Postgraduate Medical Center, March 23-29, 2014, **Karachi, Pakistan. (Oral)**
6. **Shah MA**, SK Sherwani, Sualeh M, Kanwal S, Shah MA. *Berberis lycium*: Solution to fight against urolithiasis and worms infestation in humans. 1<sup>st</sup> FUUAST Science Symposium, January 18-20, 2014 **Karachi, Pakistan. (Poster)**
7. **Shah MA**, Sualeh M, Ziaullah, Khan HQ, Ikramullah. Dexamethasone adulteration in Herbal tonics-A potential public health risk. 14<sup>th</sup> Asian Symposium on Medicinal Plants, Spices and Other Natural Products, ICCBS **Karachi, Pakistan**, December 9-12, 2013. **(Poster)**
8. **Shah MA**, Sualeh M, Khan Z, Zada B, Ahmed H, Mahmood ZA. Ethnomedicinal and phytoeconomic elaboration of Lilownai valley, District Shangla, Pakistan. 1<sup>st</sup> International Conference on Endorsing Health Sciences Research, SZRC **Karachi, Pakistan**, February 2-3, 2013. **(Oral)**

## Book Chapters

1. Behl T, Kaur I, Sehgal A, Venkatachallam T, **Shah MA**, Arora S. Food and Nutrition for Brain Development. In *Bioactive Nutraceuticals for Brain Disorders 2021* (pp. 51-74). Nova Science Publisher, USA.
2. **Shah MA\***, Rasul A, Ahad F, Chauhdary Z, Asif T, Rasul A, Shah GM, Khan A, Al-Harrasi A, Saleem U, Ahmad N, Blundell R. Bioactive Nutraceuticals and Functional Foods in Neurodegeneration. In *Bioactive Nutraceuticals for Brain Disorders 2021* (pp. 77-96). Nova Science Publisher, USA.
3. Chauhdary Z, **Shah MA\***, Saleem U, Rasul A, Khan A, Al-Harrasi A, Blundell R, Parambi DGT, Alharbi KS, Shokoohinia Y. Nutraceuticals for Parkinson's Disease. In *Bioactive Nutraceuticals for Brain Disorders 2021* (pp. 131-154). Nova Science Publisher, USA.
4. Pour PM, **Shah MA\***, Chauhdary Z, Rasul A, Saadullah M, Khan A, Al-Harrasi A, Liaqat M, Zafar M, Khan AH and Blundell R. Nutraceuticals for Multiple Sclerosis. In *Bioactive Nutraceuticals for Brain Disorders 2021* (pp. 191-214). Nova Science Publisher, USA.
5. Rasool S, Uttra AM, **Shah MA**, Amin Ac (pp. 283-300). Nova Science Publisher, USA.
6. Sadiqa A, Rasul A, Hussain G, **Shah MA**, Sarfraz I, Riaz A, Sarfraz A, Rao F, Shah GM, Selamoglu Z. Nutrition and Nutraceuticals for Brain Cancer. In *Bioactive Nutraceuticals for Brain Disorders 2021* (pp. 327-347). Nova Science Publisher, USA.
7. Panichayupakaranant P, **Shah MA**, Suksawat T. Rhinacanthin-C and Its Potential to Control Diabetes Mellitus. In *Structure and Health Effects of Natural Products on Diabetes Mellitus 2021* (pp. 197-218). Springer, Singapore.
8. Noreen N, **Shah MA**, Khan F, Niaz K, Muhammad F, Shah I, Abdollahi M. Mediterranean Diet for Active and Healthy Aging. In *Nutrients and Nutraceuticals for Active & Healthy Ageing 2020* (pp. 239-264). Springer, Singapore.
9. Hendawy OM, Alharbi KS, Parmbi DTG, Alshamari MS, **Shah MA**. Post-Traumatic Stress Disorder (PTSD). *Principals of Neurochemistry 2020* (pp. 171-184) Springer, Singapore.
10. 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.
11. Sideeq O, Khan F, **Shah MA**, Niaz K. Analysis of Isoflavonoids. In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 85-97). Elsevier.
12. Nadeema M, Khana IT, Khan F, **Shah MA**, Niaz K. Analysis of Lignans and flavonolignans. In *Recent Advances in Natural Products Analysis 2020 Jan 1* (pp. 98-116). Elsevier.

13. Shafiq M, Khan F, **Shah MA**, Niaz K. Analysis of coumarins. In Recent Advances in Natural Products Analysis 2020 Jan 1 (pp. 162-174). Elsevier.
14. 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.
15. Niaz K, Khan F, **Shah MA\***. Analysis of quinonoids. In Recent Advances in Natural Products Analysis 2020 Jan 1 (pp. 749-766). Elsevier.
16. **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.
17. 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.
18. 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.
19. 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.
20. 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 (10)

### **Book Editor**

1. Egbuna C, Patrick-Iwuanyanwu K, **Muhammad Ajmal Shah**, Ifemeje JC, Rasul A. Analytical Techniques in Biosciences: From basics to Applications. 1st Edition **Elsevier**, (<https://www.elsevier.com/books/analytical-techniques-in-biosciences/egbuna/978-0-12-822654-4>)
2. Haroon Khan, **Muhammad Ajmal Shah**. Phytomedicines in the treatment of diabetes. **Springer Nature** (In process)
3. Maria Silvana Alves, **Muhammad Ajmal Shah**, Haroon Khan. Phytochemicals, phytomedicines and antimicrobial resistance: An overview. **Elsevier** (In process)

## **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 5<sup>th</sup> International Mediterranean Symposium on Medicinal and Aromatic Plants & The 5<sup>th</sup> 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 65<sup>th</sup> GA Annual Meeting 3-7 September 2017, Basel, **Switzerland**.
5. Faculty Conference Support Grant-2017, awarded by Faculty of Pharmaceutical Sciences, Prince of Songkla University Hat-Yai, Songkhla, Thailand for poster presentation in 2<sup>nd</sup> International Symposium on Phytochemical in Food and Medicine 7-10 April 2017, Fuzhou, **China**.
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. 2<sup>nd</sup> Best Poster Award in 1<sup>st</sup> FUUAST Science Symposium 18-20 February 2014, organized by Department of Biochemistry, Federal Urdu University of Arts, Science & Technology Karachi, **Pakistan**.

## **Professional Membership**

- Honorary Faculty Members of Novel Global Community Education Foundation (NGCEF), Australia
- Member of International Natural Product Science Taskforce (INPST), Austria
- Member of International Consortium of Enzyme Inhibitors Research (ICEIR), China
- 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

### Scientific Events Organized

1. **Chief organizer**, 2<sup>nd</sup> 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. **Organizer**, *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.

### Editorial Responsibilities

- Pharmaceutical and Biomedical Research Journal  
(<http://pbr.mazums.ac.ir/page/13/Editorial-Board>)
- Turkish Research Journal of Academic Health and Medical Sciences  
(<http://www.turahes.com/index.php/TURAHES/about/editorialTeam>)
- Medical Technologies Journal  
(<http://medtech.ichsmt.org/index.php/MTJ/about/editorialTeam>)
- Guest Editor at Molecules  
([https://www.mdpi.com/journal/molecules/special\\_issues/analysis\\_drugs\\_bioactive\\_compounds](https://www.mdpi.com/journal/molecules/special_issues/analysis_drugs_bioactive_compounds))
- Guest Editor at JoVE Methods  
(<https://www.jove.com/methods-collections/595>)
- Guest Editor at Current Drug Target

### MPhil/PhD Supervision

Sr. No.	Name (Session)	Registration	Thesis Title	Role as	Status
01	Ms Irum Naz	2005-GCUF-	Preparation of berberine rich extract and its	Supervisor-II	In progress

	(PhD, 2016-19)	2797-520	therapeutic evaluation		
02	Nazia Kanwal (PhD, 2017-2020)	2017-GCUF-01680	<i>In vitro</i> and <i>in vivo</i> evaluation of mushroom-derived natural compounds against human liver cancer	Supervisor-II	In progress
03	Sadia Mushtaq (PhD, 2017-2021)	2017-GCU-PhD-BOT-332	Ethnopharmacological potential of Three Aquatic Ferns viz. <i>Marsilea quadrifolia</i> L., <i>Salvinia molesta</i> L. And <i>Azolla pinnata</i> L. Collected from Punjab, Pakistan	Supervisor-II	In progress
03	Anam Shabbir (MPhil, 2019-21)	2019-GCUF-000961	Anti-Alzheimer's activity of curcuminoids enriched extracts from <i>Curcuma longa</i>	Supervisor-II	In progress
04	Sahrish Yaqoob (MPhil, 2019-21)	2019-GCUF-01063	Antidiabetic activity of berberine rich extract in comparison to berberine	Supervisor-II	In progress
05	Moazzama Akbar (MPhil, 2019-21)	2019-GCUF-01064	Anti-Alzheimer's activity of berberine rich extract in comparison to berberine	Supervisor-II	In progress
06	Aqsa Itzaz (MPhil, 2018-20)	2013-GCUF-01510	Anti-Parkinson's activity of oxygenated benzo-chalcone derivative in mice	Supervisor-II	Completed
07	Amna Manzar (MPhil, 2018-20)	2013-GCUF-01743	Investigation of oxygenated dehydro benzo-chalcone derivative to treat haloperidol-induced Parkinson's disease in mice	Supervisor-II	Completed
06	Nazir Ahmad (MPhil, 2017-19)	2017-GCUF-01584	Pharmacological evaluation of <i>Salvia hispanica</i> seeds for anti-urolithiatic activity	Supervisor-II	Completed
07	Iqra Mubeen (MPhil, 2017-19)	2013-GCUF-08820	Phytochemical screening of <i>Solanum surattanense</i> collected from Cholistan desert of Bahawalpur, Pakistan	Supervisor-II	Completed
08	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
09	Nimra Javed (MPhil, 2017-19)	2017-GCUF-02782	Anti-Parkinson activity of ethanol extract of <i>Brassica juncea</i> leaves	Supervisor-II	Completed
10	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	Completed
11	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

### Trainings/Workshops/Seminars/Conferences

1. One week online-International Faculty of Development Program on Pharmaceutical Education and Research, May 13<sup>th</sup> – 18<sup>th</sup>, 2020, organized by Bapatla College of Pharmacy, Bapatla, Andhra Pradesh, India, Affiliated to JNTU Kakinada, New Delhi.
2. Seminar on “Pharmaceutical Manufacturing and Quality Assurance”, February 27<sup>th</sup>, 2020, organized by, Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Government College University, Faisalabad, Pakistan.
3. The 5<sup>th</sup> International Symposium on Pharmaceutical and biomedical Sciences, April 26<sup>th</sup>-28<sup>th</sup>, 2019, organized by Austrian Drug Screening Institute in Cappadocia, Nevsehir, Turkey.



4. The 5<sup>th</sup> International Mediterranean Symposium on Medicinal and Aromatic Plants, April 24<sup>th</sup>-26<sup>th</sup>, 2019, organized by Austrian Drug Screening Institute in Cappadocia, Nevsehir, Turkey.
5. 20<sup>th</sup> International Pharmacy Conference and Exhibition, “Recent Advancements, Future Trends and Challenges in Pharmacy” October 27<sup>th</sup>-30<sup>th</sup>, 2019, organized by Pakistan Pharmacists Association, in Pearl Continental Hotel Lahore, Pakistan.
6. 2<sup>nd</sup> International Symposium on Pharmaceutical Sciences, “Innovation and Integration in Pharmaceutical and biomedical Sciences, Way forward for Collaboration” January 30, 2019, organized by, Department of Pharmaceutics, Faculty of Pharmaceutical Sciences, Government College University, Faisalabad, Pakistan, in Collaboration with Department of Pharmacy, Forman Christian College Lahore, Pakistan.
7. 2<sup>nd</sup> International Conference on Applied Zoology (ICAZ-219), December 19-20<sup>th</sup>, 2019, Faculty of Zoology, Government College University, Faisalabad, Pakistan.
8. Seminar on Nutraceuticals and Health, December 6<sup>th</sup>, 2019, organized by Forman Christian College (A chartered University).
9. 1<sup>st</sup> One day Seminar on Development of Herbal Medicines using Green Extraction and Standardization Methods, January 28<sup>th</sup>, 2019, organized by Prof. Dr. Pharlphoom Panichayupakaranant, in Punjab University College of Pharmacy, Allama Iqbal Campus, Lahore.
10. 18<sup>th</sup> International Chemistry and 30<sup>th</sup> National Conference on Recent Trends in Chemistry-CCUMT-2019, November 27-29<sup>th</sup>, 2019 at UMT Lahore.
11. 1<sup>st</sup> International Symposium on Pharmaceutical Sciences, April 23<sup>th</sup>, 2018, Faculty of Pharmaceutical Sciences, Government College University, Faisalabad, Pakistan.
12. One Day Workshop on “Current Trends in the Use of Natural Products as Therapeutic Agents”, November 12<sup>th</sup>, 2018, organized by Department of Pharmacy, Forman Christian College (A chartered University).
13. One Day Workshop on “Current Good Manufacturing Practices (cGMP), May 4<sup>th</sup>, 2018 organized by Department of Pharmacy, Forman Christian College (A chartered University).
14. The 4<sup>th</sup> Current Drug Development International Conference (CDD 2016), June 1-3<sup>th</sup>, 2016 organized by Phuket Graceland Resort and Spa, Patong Beach, Phuket, Thailand.
15. Workshop on Development of Medicinal Products “Specialization and Standardization of Medicinal Plants and Related Products” June 15-19<sup>th</sup>, 2015 organized by Department of Pharmacognosy and Pharmaceutical Botany, Faculty of Pharmaceutical Sciences, Prince of Songkla University, Thailand.
16. Golden Jubilee Symposium, March 23-29<sup>th</sup>, 2014 organized by Jinnah Postgraduate Medical Centre and Hospital Karachi.

17. Workshop on “Manuscript writing and publishing”, April 04<sup>th</sup>, 2014, organized by American Society of Microbiology, Department of Microbiology FUUAST and Medical Microbiology Association of Pakistan (MMAP), Karachi, Pakistan.
18. 1<sup>st</sup> National Seminar-cum-training course on Green Chemistry and Environmental effects, July 4<sup>th</sup>, 2013, organized by Department of Chemistry, Federal Urdu University of Arts, Sciences and Technology (FUUAST), Karachi in collaboration with National Academy of Young Scientists (NAYS), Pakistan and The Emerging Nations Science Foundation (ENSF), Italy.
19. Workshop on “Preparation of Laboratory Chemicals and Reagents”, May 29<sup>th</sup>, 2013, organized by Department of Microbiology, FUUAST and Medical Microbiology Association of Pakistan (MMAP), Karachi, Pakistan.
20. 1<sup>st</sup> International Conference on Endorsing Health Science Research, February 2<sup>nd</sup>-3<sup>rd</sup>, 2013, organized by Advance Educational Institute and Research Centre, at Sheikh Zayed Islamic Centre, Karachi.
21. Two Days Conference on Climate Change and Bioresources of Pakistan, March 21<sup>st</sup> and 22<sup>nd</sup>, 2013, organized Laboratory of Dendrochronology and Plant Ecology, Department of Botany Gulshan-e-Iqbal Campus, Karachi, Pakistan.
22. Oral Presentation on Ethnomedicinal and Phyto-economic elaboration of Lilownai valley District Shangla, Pakistan in session of ICEHSR, February 2<sup>nd</sup>-3<sup>rd</sup>, 2013, at Sheikh Zayed Islamic Centre, Karachi.
23. Seminar on “Clinical Research, Pharmacovigilance PhV Net Data Base”, February 28<sup>th</sup>, 2013, organized by Department of Microbiology, FUUAST and MMAP.
24. Workshop on “Biosafe Practices in Research & Laboratory Settings”, October 4<sup>th</sup>, 2012, organized by Department of Microbiology, FUUAST in collaboration with Biosafety Association of Pakistan (BSAP).
25. 13<sup>th</sup> National Health Sciences Research Symposium on “Impact of Water and Sanitation on Health (Our Problems, Our Solutions)”, October 27-28<sup>th</sup>, 2009 at Agha Khan University, Karachi, Pakistan.
26. Seminar on “Strengthening the Role of Pharmacist in Drug Abuse Prevention”, May 24<sup>th</sup>, 2008 organized by Drug Free Pakistan Foundation and Department of Pharmacy, FUUAST, Karachi, Pakistan.
27. Medical, Dental and Nursing Conference on “World Health Update”, June 26-28<sup>th</sup>, 2007, Karachi, Pakistan.