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Res. Address: House No. p-92A, Extension-Block-A, Ismail Valley, Daewoo Road, Faisalabad, 38000, Pakistan (Present).
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Qualifications:

Degree	Year of Passing	Marks/ CGPA	Division	Institute/Board/University	Subjects
Matric	2001	652/850	1 st	Chenab Public school, Chiniot	Science
F. Sc.	2003	738/1100	1 st	Govt. Islamia College, Chiniot	Biology Group
B. Sc.	2005	498/800	1 st	Punjab University, Pakistan	Chemistry, Botany, Zoology
M. Sc	2007	3.57/4.00	1 st	University of Agriculture, Faisalabad, Pakistan	Biochemistry
M. Phil	2009	3.68/4.0	1 st	University of Agriculture, Faisalabad, Pakistan	Biochemistry
Ph. D	2016	Completed (13 th Oct 2016)		University of Agriculture, Faisalabad, Pakistan	Biochemistry (Thesis title: Molecular studies on plant based cyclotides for protein-protein interaction)

DCA Computer Diploma	2005	Pass	1 st	Govt. Islamia College, Chiniot	Excel, MS word, PowerPoint, Inpage
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Areas of Interest:

- ❖ Drug Development, Molecular biology, Genetics, Gene expression studies, Bioinformatics, Biotechnology, Microbiology (Probiotics, extremophiles etc), Biochemistry, Bioactive Molecules.

Job Experience

- ❖ Worked as a Research Officer in project titled “Cloning of cellulases gene(s) for ethanol production from plant biomass” under PAEC at NIBGE, Faisalabad (Since 27th FEB, 2008 till 14th October, 2009)

- ❖ Worked as a lecturer of Biochemistry in the Institute of Biochemistry & Biotechnology, University of veterinary and Animal Sciences, Lahore & Pattoki campus. (Since 15th October 2009 till September 2011).
- ❖ Worked as Lecturer (Biochemistry) BPS-18 as Permanent faculty in Dept of Biochemistry, University of Agriculture, Faisalabad since 16th September 2011 till 31st August 2019.
- ❖ **Presently working** as Assistant Professor BPS-19 as Permanent faculty in Dept of Biochemistry, University of Agriculture, Faisalabad since 31st August 2019 till Present.
- ❖ Member Editorial board International Scientific Organization. <http://www.iscientific.org/editorial-board/>

Additional Duties

Sports convener of Dept of Biochemistry, UAF (since 2022), CoTutor and Tutor of Qazi Essa Jaffar Group 308, Member discipline committee (Since 2022), Member faculty vigilance committee at UAF, Coordinator BS Biochemistry Programme at main campus, sports manager of Basketball faculty teams, Convener short training programmes for undergraduates, Convener dept Tours etc.

Memberships

- i. The Chemical Society of Pakistan (Life time membership#P0342).
- ii. Biochemical society,UK (advancing molecular bioscience) Membership # 01052112.
- iii. International Scientific Organization (Life time membership #52) + member editorial board of international journal of chemical & biochemical sciences (IJCBS).

Experiences on Advanced Equipment and Techniques:

- Gel documentation and analysis system, Electrophoresis, chromatography, HPLC, LC-MS, Mass spectrometry, Flow cytometry FACS (Fluorescence-activated cell sorting), fluoumetry, SDS-PAGE, PCR, Reverse Transcriptase-PCR, Spectrophotometric analysis , flame photometry, Cloning & Gene expression and purification Techniques, protein labeling and protein-protein interactions, expressed protein libraries screening for inhibiting cancerous proteins, Fermentation techniques for optimization and characterization of species, Fermentor operation, Able to work with different kits, vectors and manual protocols, Microbiological techniques.

Research Conducted individually and in collaborations:

- Isolation of *creI* gene from *Chaetomium thermophile* and cloning in *E.coli* and RT-PCR analysis for confirmation of intronless gene and reporting first time the existence of CCR machanism in the said specie. (**M.Sc**)
- Isolation, Characterization and cloning of cellulase genes from thermophilic bacterial *spp*. Under the project titled, “Cloning of Cellulases gene(s) for ethanol production from plant biomass” in NIBGE, Faisalabad. (PAEC) **as research officer**.
- Isolation and Cloning of genes for fibrinolytic enzyme (FE) from locally isolated *Bacillus* spp.(**M.Phil**)
- Molecular identification of locally isolated fungus and extremophilic *Bacillus* from ITS region and 16S rRNA.
- Worked on Cyclotide MCOT-I labeling with fluorescent dye Texas Red for protein-protein interaction studies (research conducted in School of Pharmacy, University of Southern California, Los Angeles, USA 2014).
- Worked on “screening of anti-cancerous cyclotide based protein libraries”. (Research conducted in School of Pharmacy, University of Southern California, Los Angeles, USA 2014).
- Worked on, “Production of cyclotides-gafted-CP4 from Yeast cells”. (Research conducted in School of Pharmacy, University of Southern California, Los Angeles, USA 2014).
- Working on, “Isolation of cyclotide genes and studying the bioactive potential of cyclotide bearing selected medicinal plants”.
- Working on the bioactivities of bioactive molecules fractionated from different plant and bacterial species.

- Allelopathy effects, Biodecolorization studies, Probiotics, extremozymes and extremophiles, synergistic/antagonistic effects of combined drugs.

Awards

- Awarded 2nd Prize (certificate + Cash) in poster competition at 2nd International Conference of Biochemistry, Biotechnology and Biomaterials held on December 9th to 11th 2018 by Dept of Biochemistry, University of Agriculture Faisalabad, Pakistan.

Publications

❖ Research papers and findings Published/Submitted

PUBLISHED

- 1) **ZAHD MUSHTAQ**, Mubashra Saadia, Rana Salman Anjum, Amer Jamil*. 2009. Cloning of intronless *creI* gene from *Chaetomium thermophilum*. Annals of Microbiology, 59 (4): 785-788.
- 2) Kashif Jilani*, Muhammad Asgher, Haq Nawaz Bhatti and **ZAHD MUSHTAQ**. 2011. Shake Flask Decolourization of Direct Dye Solar Golden Yellow R by *Pleurotus ostreatus*. Journal of the Chemical Society of Pakistan, Volume 33 (2) April 2011, 209-214.
- 3) Aamir Abbas, Sibtain Ahmad, **ZAHD MUSHTAQ** & Amer Jamil. 2012. Partial Purification and characterization of a xylanase from *Trichoderma harzianum*. Journal of the Chemical Society of Pakistan, volume 34 issue 6, 2012. pages 1455-1459
- 4) **ZAHD MUSHTAQ** and Amer Jamil. 2012. Isolation of a fibrinolytic enzyme BKII gene from local isolate of *Bacillus*. International Journal of Chemical and Biochemical Sciences (ISSN 2226-9614). Volume 2, pages 94-100.
- 5) Raffia Rehman, Muhammad Asif Hanif, **ZAHD MUSHTAQ** and Abdullah AL-Saadi. 2016. Biosynthesis of essential oils in aromatic plants being used in foods: A Review. Food Reviews International. Pages 1-103(DOI: 10.1080/87559129.2015.1057841).
- 6) Krishnappa Jagadish, Andrew Gould, Radhika Borra, Subhabrata Majumder, **ZAHD MUSHTAQ**, Alexander Shekhtman and Julio A. Camarero. 2015. Recombinant expression and phenotypic screening of a bioactive cyclotide against α -synuclein-induced cytotoxicity in baker's yeast. Angewandte Chemie International edition, 54(29):8390-4. DOI: 10.1002/anie.201501186. willey online Library
- 7) Ghulam Hussain, Muhammad Athar Abbasi, Aziz-ur-Rehman, Sabahat Zahra Siddiqui, Muhammad Ashraf, Aasia Noreen, Muhammad Arif Lodhi, Farman Ali Khan, Muhammad Shahid, **ZAHD MUSHTAQ** and Syed Adnan Ali Shah. 2016. Synthesis and Molecular Docking Study of Some New 4-[[4-(2-Furoyl)-1-piperazinyl]methyl]-N-(substituted-phenyl) benzamides as Possible Therapeutic Entrants for Alzheimer's Disease., Med chem (Los Angeles), 6:2, pages 129-136. <http://dx.doi.org/10.4172/2161-0444.1000337>.
- 8) Rafia Rehman, Muhammad Asif Hanif and, **ZAHD MUSHTAQ**, Bereket Mochona and Xin Qi*, "Biosynthetic Factories of Essential Oils: The Aromatic Plants", Natural Products Chemistry & Research, 2016, 4 (4): 227. doi:10.4172/2329-6836.1000227.
- 9) Bazgha Ijaz, Muhammad Asif Hanif, **ZAHD MUSHTAQ**, Muhammad Mumtaz Khan, Ijaz Ahmad Bhatti and M. J. Jilani. 2017. Isolation of Bioactive Fractions from *Ocimum Sanctum* Essential Oil. Oxidation Communications, 40, No 1-I, 158–167.
- 10) Fateha Irshad, **ZAHD MUSHTAQ*** and Amer Jamil. 2016. PCR based screening for *srfAA* ORF1 from local *Bacillus* species. International Journal of Chemical and Biochemical Sciences, Vol. 9 Pages 1-9.
- 11) **ZAHD MUSHTAQ***, Tahira Iqbal, Nisar Ahmed and Amer Jamil. 2017. Antioxidants from selected indigenous plants possessing cyclotides. Oxidation Communications, 40, No 1-I, 102–119.
- 12) Zainab Kaleem, Junaid Ali Khan, **ZAHD MUSHTAQ***, Sidra Altaf and Ijaz Javed. May 2018. Assessment of potential interaction between simvastatin and clarithromycin in healthy adult male subjects. Pakistan Journal of Pharmaceutical Sciences, Manuscript No.4475, volume number 31(3), 801-806.
- 13) Syed Husnain Raza Shah, **ZAHD MUSHTAQ***, Muhammad Shahid, Muhammad Athar Abbasi and Aziz Ur Rehman. 2016. Evaluation of *in vitro* antioxidant and thrombolytic studies of some N-(2,3-dihydro-1,4-benzodioxan-6-yl)-4-methylbenzenesulfonamide N-acetamide derivatives. Journal of Chemical and Pharmaceutical Research, 2016, 8(3):424-431.
- 14) Muhammad Athar Abbasi, Ghulam Hussain, Aziz-ur-Rehman, Sabahat Zahra Siddiqui, Syed Adnan Ali Shah, Muhammad Arif Lodhi, Farman Ali Khan, Muhammad Ashraf, Qurat-ul-Ain, Irshad Ahmad, Rabia Malik, Muhammad Shahid and **ZAHD MUSHTAQ**. 2017. Synthesis of Some Unique Carbamate Derivatives bearing 2-Furoyl-1-piperazine as a Valuable Therapeutic Agents. Acta Chim. Slov. 64(1), 159–169. DOI: [10.17344/acsi.2016.2986](https://doi.org/10.17344/acsi.2016.2986)
- 15) Mubshara Saadia, Amer Jamil, Muhammad Ashraf, Tahira Iqbal, **ZAHD MUSHTAQ**, Irfan Shoukat. A salt stress induced chloroplast cDNA from canola has similarity to carcinoma related-DNA sequences". Agrochimica (manuscript#1003), Volume 61(3),165-179, 2017. the University of Pisa. <https://www.pisauniversitypress.it/scheda-fascicolo/autori-vvari/agrochimica-3-2017-it-21857-548424.html>

- 16) Farzana Nighat, **ZAHID MUSHTAQ**, Munaza Maqsood, Muhammad Shahid, Muhammad Asif Hanif, Amer Jamil. January 2020. Cytotoxic, α -amylase inhibitory and thrombolytic activity of organic and aqueous extracts of *Bacillus clausii* KP10. Vol.33 (No.1), 135-139.
- 17) Farzana Nighat and **ZAHID MUSHTAQ**. 2019. *In Vitro* Antimicrobial and Antioxidant Activities of Organic and Aqueous Extracts of *Bacillus clausii* KP10. **J chem. Soc of Pakistan**. Vol. 41 No.1(2), pages 161-168.
- 18) N. Erum, **Z. MUSHTAQ*** and A. Jamil. 2017. Isolation and identification of a catalase producing thermotolerant alkalotolerant *Bacillus* sp. Strain KP10 from hot springs of Tatta Pani, Azad Kashmir. *The J. Anim. Plant Sci.* 27(6).
- 19) Bazgha Ijaz, Muhammad Asif Hanif, Umer Rashid *, Muhammad Zubair, **ZAHID MUSHTAQ**, Haq Nawaz, Thomas Shean Yaw Choong, Imadeddine Arbi Nehdi. 3rd June 2020. High Vacuum Fractional Distillation (HVFD) Approach for Quality and Performance Improvement of *Azadirachta indica* Biodiesel. *Energies*-763641(MDPI), 13, 2858. Pages 1-15. doi:10.3390/en13112858 .
- 20) Fateha Irshad, **ZAHID MUSHTAQ**, Shakeel Akhtar. April 2018. Sequence analysis and comparative bioinformatics study of camelysin gene (calY) isolated from *Bacillus thuringiensis*. *Biochemical Genetics*. 56(1-2), 103-115. DOI: 10.1007/s10528-017-9833-6.)
- 21) **ZAHID MUSHTAQ***, Sibtain Ahmed, Fateha Irshad, Ghulam Mustafa,. July-Aug 2021 Issue. Isolation, identification and sequence analysis of subtilisin gene (QuaKing Homolog) encoding a fibrinolytic enzyme from *Bacillus subtilis*. 83(4): 856-864. **Indian J of Pharmaceutical Sciences IJPS-19-3340**.
- 22) Hina Awais, Zahid Mushtaq, Muhammad Jamshed, Kashif Jilani, Amer Jamil. March 2018. Isolation of a Papain like Cysteine Proteases (PLCP) Gene Sequence from the Genomic DNA of Local *Carica Papaya* Plant. *Journal of Chemical and Pharmaceutical Research*, 10(2) Page 72-76.
- 23) **Z. MUSHTAQ**, U. Khan, N. Seher, M. Shahid, M. T. Shahzad, A. A. Bhatti and T. Sikander. Online January 24th 2021. Evaluation of Antimicrobial, Antioxidant and enzyme inhibition assays by polar and non-polar extracts/fractions of *Clitoria ternatea* seed. *JAPS*. Vol 31(5) Pages 1405-1418. <https://doi.org/10.36899/JAPS.2021.5.0342>
- 24) Munaza Maqsood, **ZAHID MUSHTAQ**, Kashif Jilani and Usama Khan. October 2019. Active fractions from *E. coli* (ATCC 35218) with Antimicrobial and Antioxidant Properties. *JAPS*. 29 (5), 1433-1441.
- 25) Hina Awais, **ZAHID MUSHTAQ***, Sumaira Sarwar, Amer Jamil. April 2018. Sequence analysis of HMG-CoA synthase like gene from *Brassica Rapa*. *Journal of Cloning & Transgenesis* 7(1), pages 1000163-170. DOI: 10.4172/2168-9849.1000163
- 26) Munazza Maqsood, **ZAHID MUSHTAQ**, Tahir Rasheed, Zaka Un Nisa, Farooq Sher. 2021. Thrombolytic and cytotoxic activity of different Bioactive extracts of *E. coli*. *Case Studies in Chemical and Environmental Engineering* (Elsevier). Vol (3) 100080. <https://doi.org/10.1016/j.cscee.2021.100080>
- 27) Ghulam Hussain, Muhammad A Abbasi*, Aziz-ur-Rehman, Sabahat Z Siddiqui, Irshad Ahmad, Rabia Malik, Muhammad Shahid , **ZAHID MUSHTAQ**, Syed AA Shah. July 2018. Synthesis of 3-[4-(2-furoyl)-1-piperazinyl]-N-(substituted)propanamides as promising antibacterial agents with mild cytotoxicity. *Tropical Journal of Pharmaceutical Research* (ISSN: 1596-5996 (print); 1596-9827 (electronic))., 17 (7): 1397-1406. <http://dx.doi.org/10.4314/tjpr.v17i7.25>
- 28) Farwa Nadeem, Muhammad Asif Hanif, Muhammad Irfan Majeed and **ZAHID MUSHTAQ**. 2018. Role of Macronutrients and Micronutrients in the Growth and Development of Plants and Prevention of Deleterious Plant Diseases – A Comprehensive Review. *IJCBS*, 13:31-52.
- 29) Tahreem Sikander, Aqsa Anum Bhatti, **ZAHID MUSHTAQ***, Farzana Nighat , Muhammad Shahid and Sidra Anwar. 2021. Evaluation of the Bioactive role of indigenous *Viola odorata* Leaf Extracts. *Pak. J. Bot.*, 53(2): 541-549, 2021. DOI: [http://dx.doi.org/10.30848/PJB2021-2\(23\)](http://dx.doi.org/10.30848/PJB2021-2(23))
- 30) Muhammad Bilal Tufail, Ghulam Mustafa*, Faiz Ahmad Joyia, **ZAHID MUSHTAQ**, Ghazala and Muhammad Sarwar Khan. 2019. Establishment of proficient *in vitro* mass multiplication and regeneration system for enhanced production of stevioside and rebaudioside A in *Stevia rebaudiana*. *Journal of Animal and Plant Sciences*, Volume: 29, No. 3.796-802
- 31) Oswa Fatima, **ZAHID MUSHTAQ***, Nimrah Seher. 2022. Isolation and purification of bioactive fractions from *Cassia glauca* Lam leaves. 32(2). Pages 589-595 <http://thejaps.org.pk/Volume/2022/32-02/30.php> (online August 2021)
- 32) Wajiha Mushtaq , Madiha Rafiq, **ZAHID MUSHTAQ** , Farwa Nadeem and Hafiz Abdul Qadeer. 2019. Wastewater Treatment and Dye Sequestration using Potential Magnetic Composites – A Comprehensive Review *IJCBS*, 15:74-86.
- 33) Rabia Kainat, **ZAHID MUSHTAQ** and Farwa Nadeem. 2019. Derivatization of Essential Oil of Eucalyptus to Obtain Valuable Market Products – A Comprehensive Review. *IJCBS*, 15:58-68.
- 34) Shehnaz Kabeer and **ZAHID MUSHTAQ**. 20th Sept 2022 online **Published in Feb 2023**. Synergistic and Antagonistic effects on antimicrobial properties of organic and aqueous extracts of *Bacillus clausii* KP10 in combination with conventional antibiotics. Vol 33 (1) (<https://www.thejaps.org.pk/Volume/2023/33-01/17.php>).
- 35) Ayesha Naveed, Kashif Jilani *, Abu Bakar Siddique, Muhammad Akbar, Muhammad Riaz, **ZAHID MUSHTAQ**, Muhammad Sikandar, Sajida Ilyas, Ismat Bibi, Asma Asghara, Ghulam Rasool, Muhammad Irfan. 3rd August 2020. Induction of erythrocyte shrinkage by omeprazole. Dose-Response, 1-5. <https://journals.sagepub.com/doi/10.1177/1559325820946941>

- 36) Ayesha Mushtaq, Muhammad Asif Hanif, Muhammad Zahid, Umer Rashid, **ZAHID MUSHTAQ**, Muhammad Zubair, Bryan R Moser, Fahad A. Alharthi. 2021. Production of and Evaluation of Tamarind seed oil methyl esters as a new source for biodiesel. *Energies* (MDPI). 14, 7148. <http://doi.org/10.3390/en14217148>.
- 37) Nayila Ayub, Zahid Mushtaq*, Muhammad Jamshed and Sadia Shabbir. July 2021. Enzyme inhibition studies of purified bioactive fraction of *Cassia glauca* Lam leaves. *IJCBS*, 19(2021) Pages 94-101. **[Published]**
- 38) Sattar, Tayyba ; Jilani, J ; Parveen, Khalida ; **MUSHTAQ, ZAHID** ; Nawaz, Haq ; Khan, Maham, April-June 2022. Induction of Erythrocyte Membrane Blebbing by Methotrexate Induced Oxidative Stress, Dose response An international Journal. I-6. DOI: 10.1177/15593258221093853
- 39) Fatima Mukhtar, Kashif Jilani, Ismat Bibi, **ZAHID MUSHATAQ**, Maham Abdul Bari Khan , and Maria Fatima. January-March 2022. Stimulation of Erythrocyte Membrane Blebbing by Bifenthrin Induced Oxidative Stress. Dose-Response (SAGE): An International Journal. 2022:1–6. DOI: 10.1177/15593258221076710
- 40) Umar Khayam, **ZAHID MUSHTAQ**, Mateen Abbas, Kashif Jilani, Muhammad Ali , Nayila Ayub. JULY 2022. Enzyme inhibition studies of ethyl acetate extract of *Pinus wallichiana* needles from Azad Kashmir. *International Journal of Chemical and Biochemical Sciences*.
- 41) **ZAHID MUSHTAQ***, Natasha Erum, Amer Jamil and Sameen Mumtaz. July 2022. Cyclotides as potential bioactive cyclic peptides: An overview. *International Journal of Chemical and Biochemical Sciences*.
- 42) Zafar F, Shahid M, Fatima H, Riaz M, Anjum F, **MUSHTAQ Z**, Zia S, Jahangir MM, Aslam MA. 2022 Oct 13. Antibiofilm and Quorum Sensing Inhibition (QSI) Potential of *Lagerstroemia speciosa* Leaves Extract. Dose Response. 20(4):15593258221132080. doi: 10.1177/15593258221132080. PMID: 36262717; PMCID: PMC9575460
- 43) Ayesha Sana, Zahid Mushtaq, Hafiza Ayesha Nawaz, Amna Shahid Awan, Areeba Zaheer. Halophilic bacteria and its applications in various fields. Page 8 on Abstract book. *International Journal of Natural Medicine and Health Sciences* (IJNMS). January 10th, 2023 International Conference on Recent Trends in Biological Sciences (RTB-2023). Volume-1 (2022). <https://journals.iub.edu.pk/index.php/ijnms/article/view/1550/645>.
- 44) Maham Siddiq, **Zahid Mushtaq**. Bioactive studies of extracellular and intracellular ethyl acetate extracts of *Bacillus clausii* KP 10. January 10th, 2023 International Conference on Recent Trends in Biological Sciences (RTB-2023). Page 14 on Abstract book. *International Journal of Natural Medicine and Health Sciences* (IJNMS). Volume-1 (2022) <https://journals.iub.edu.pk/index.php/ijnms/article/view/1550/645>
- 45) Amber A, Nawaz H, Bhatti HN, **Mushtaq Z**. 2023 May 21. Surface-enhanced Raman spectroscopy for the characterization of different anatomical subtypes of oral cavity cancer. *Photodiagnosis Photodyn Ther*. 2023 Jun;42:103607. doi: 10.1016/j.pdpdt.2023.103607. PMID: 37220841.
- 46) Khaliq M, Hanif MA, Bhatti IA, **Mushtaq Z**. 2023 Jul 9. A novel study for producing complexed and encapsulated nutrients at nanometric scale to enhance plant growth. *Sci Rep*;13(1):11100. doi: 10.1038/s41598-023-37607-x. PMID: 37423907; PMCID: PMC10330181.
- 47) Fatima Yousaf, Muhammad Shahid, Zahid Mushtaq, Junaid Ali Khan. 2024. *In Vitro* evaluation of *P. Dactylifera* and *J. Regia* nutraceutical extracts through antioxidant assays, cytotoxic study and their effect on sperm motility. *Journal of xi'an shiyu University, natural sciences edition*. 67 (07). doi: 10.5281/zenodo.12794152.
- 48) Muhammad Tahir, Muhammad Irfan Majeed, Munir A Anwar, Haq Nawaz, Zahid Mushtaq. Dec 2024. Surface-Enhanced Raman Spectroscopy for Evaluation of Antibacterial Activity of the N-Heterocyclic Carbene Selenium Complex and Its Ligand Against Pathogenic Bacterial Strains Using Multivariate Data Analysis Techniques. *Analytical Letters*. 57 (18). 3131-3148.

SUBMITTED

- 1) Zahid Mushtaq and Natasha Erum. Reference: PRBI_2017_1423. A review: Fibrinolytic Enzymes as Emerging Thrombolytic Therapeutics. *Journal: Process Biochemistry*.
- 2) Sana Fazil, Zahid Mushtaq*, Saman Farooq, Kashif Jilani, Sherza Dayal. 1st march 2022. Synergistic or antagonistic effect of fat-soluble vitamins (E, D3 and K1) on antimicrobial activity of antibiotics. *JCSP-02032022-12607*
- 3) Faiza Maqsood; Zahid Mushtaq*; Fateha Irshad and Amer Jamil. (Serial No.7554 dated 23-07-19). Isolation and bioinformatics analysis of cyclotide genes from indigenous *Viola odorata* and *Viola tricolor* plants. *Pak J Pharm Sci*.
- 4) Usama Khan and Zahid Mushtaq. Evaluation of thrombolytic and hemolytic potential of different organic and aqueous fractions of *Clitoria ternatea* seeds extracts. **Frontiers in Biology,nature/** 2019-01-00086/ABAB-D-19-00787.
- 5) Muhammad Rizwan, Zahid Mushtaq and Sadia Shabbir. 5th Jan 2021. *In Vitro* Synergistic or Antagonistic Antioxidant Studies of Bioactive Fractions of *Cassia glauca* Leaves. **Croatia Chemica Acta. CCA-3783-21**
- 6) Farooq Ahmad, Muhammad Babar Taj*, Muhammad Imran*, Muhammad Ramzan, Muhammad Adeel, Muhammad Nadeem Akhtar, Zahid Mushtaq, Sadia Shabbir. 27th Feb 2021. Antimicrobial and antihemolytic activities of porous chitosan-alginate- biosynthesized copper nanoparticles. *Int. Journal of Biological Macromolecules*. **(Submitted 20-5-21)**

- 7) Sadia Shabbir, Zahid Mushtaq and Muhammad Rizwan. 5th May 2021. Synergistic and antagonistic antimicrobial studies of *Cassia glauca* Lam leaves in combination with Streptomycin (STM) and Terbinafine (TER) drugs. Turkish J of Biology (TUBAIK). BIY-2105-7.
- 8) Areeba Ifthikhar, Zahid Mushtaq and Natasha erum. 2019. Evaluation of Acetylcholinesterase Inhibition and Antioxidant Activity of Selected Indigenous plants from district Kotli Azad Kashmir. **Kuwait Journal of science ID=8611**
- 9) Sidra Anwar, Zahid Mushtaq*, Muhammad Shahid, Muhammad Jamshed and Farzana Nighat. 2018. Evaluation of Bioactive potential and Quantitative HPLC analysis of Phenolics of *Clitoria ternatea* leaves extracts. Pakistan Journal of Agricultural Sciences **MS# 7086**
- 10) Zobia khalid, **Zahid Mushtaq**, Sidra Anwar, Muhammad shahid, farzana nighat. 2020. Antibacterial, antioxidant and cytotoxic activity of *petunia axillaris* leaves extracts using polar and non polar solvents. JPBB-D-20-00087.
- 11) Zirwa Anwar, Shehla Javaid, Zahid Mushtaq*, Amer Jamil. August 2019. Isolation and Comparative Analysis of Defensin like gene (DEFL) from *Datura stramonium*. Biochemical genetics. BIGI-D-19-00241.
- 12) Ayesha Jabbar, Zahid Mushtaq, Muhammad Jamshed. 2019. Meta Quantitative Trait Locus (QTL) Analysis of Fiber Quality and Agronomic Traits in Upland Cotton. The cotton Journal (**Submitted: CJ-S-19-00909**)
- 13) Nida Nasir, Shameem Akhtar, Zahid Mushtaq. 2019. Isolation and Bioinformatics Analysis of Kunitz Trypsin Inhibitor (KTI) from Glycine max. International Journal of Bioinformatics Research and Applications **IJBRA-282215, 13 Feb 20**
- 14) M.Asif Hanif, saba Idrees, Mirza ikram, Irfan Majeed, M. Adan, M. Zubair, M. Adnan ayub, Zahid Mushtaq, 2021. Essential Oil' Chemical Characterization of dying Indian Rosewood trees. New Zealand Journal of Botany, NZJB-2021-0041.
- 15) Nimrah Seher, Maham Siddiq, Zahid Mushtaq*, Oswa Fatima. 2020. Comparative *in vitro* bioactive studies of crude and purified ethyl acetate extracts of *B. clausii* KP10. (Submitted in PIPS publication vide Serial No.7976 (Regular)13-02-2020.
- 16) Saman Farooq, Zahid Mushtaq*, Mateen Abbas, Muhammad Asif Hanif, Kashif Jilani, Sherza Dayal, Sana Fazil. 9th march 2022. *In vitro* synergistic or antagonistic antioxidant studies of different extracts of *Withania somnifera* and *Withania coagulans* leaves from Taunsa Sharif. JCSP-932022-33136
- 17) Sherza Dayal¹, Zahid Mushtaq^{1*}, Kashif Jilani², Muhammad Asif Hanif³, Ghulam Mustafa⁴, Sana Fazil¹, Saman Farooq¹, Nayila Ayub. 9th March 2022. Enzyme inhibition studies of ethyl acetate and xylene extracts of *Withania coagulans* and *Withania somnifera* leaves from Taunsa Sharif. JCSP-11032022-12612
- 18) Muhammad Hayat¹, Natasha Erum, Zahid Mushtaq^{1*}. 26th April 2022. *In Silico* Studies of Alkaline Protease (*aprA*) Gene Isolated from *Bacillus clausii* KP10. Brazilian Archives of Biology and Technology.Submission ID= BAPT-2022-0308.
- 19) Fatima Yousaf, Muhammad Shahid, Zahid Mushtaq, Junaid Ali Khan. 15th April 2022. *P. guajava* nutraceutical extract ameliorates the reproductive hormones and testicular histology in male albino rats. international Journal of Immunopathology and Pharmacology. IJI-22-0078.
- 20) Shehla Javaid, Zahid Mushtaq, saba Amer, Amer Jamil, Samiah Shahid. 31 Aug Submitted. Isolation and Comparative sequence Analysis of Defensin like gene (DEFL) from *Datura stramonium*. EVB-2021-0143. (Submitted in Evolutionary Bioinformatics)
- 21) Muhammad Tahir, Haq Nawaz, Zahid Mushtaq, Munir A. Ahmad, 2021. Surface-enhanced Raman spectroscopy for comparison of antibacterial activity of lab synthesized imidazole derivative with commercially available derivative (Tinidazole). Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy.
- 22) Shehnaz Aktar and Zahid Mushtaq. 2020. Synergistic and Antagonistic effects on antioxidant properties of organic and aqueous extracts of *Bacillus clausii* KP10. JAPS 12021, dated 25th sep-21.
- 23) Syed husnain raza shah, M Shahid, Zahid Mushtaq. 2020. Evaluation of *in vitro* antimicrobial and toxicological studies of some *N*-(2,3-Dihydro-1,4-Benzodioxan-6-yl)-4-methylbenzenesulfonamide-*N*-acetamide Derivatives. Chinese Journal of Chemistry. International Journal of Pharmaceutical Sciences and Research (IJPSR) IJPSR/RA-14427/03-20.
- 24) Asma Nawaz and Zahid Mushtaq. 27th June 2023. Phytochemical screening and antimicrobial activity of medicinal plant spp. *Euphorbia helioscopia*. PHYTOCHEM. Manuscript #D-23-000698.
- 25) Fatima Yousaf; Muhammad Shahid; Zahid Mushtaq; Junaid Ali Khan. 03-06-2024. Chitosan-TPP loaded nano-formulations of *P. dactylifera* extract upregulates gonadal hormones, and the mRNA expression of GnRH, AR and Kiss-1 genes in CCl4 intoxicated rats. Journal of Biological Regulators and Homeostatic Agents (JBRHA).
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- 27) Ayesha Mushtaq, Asif Hanif, Raziya Nadeem, Zahid Mushtaq. 21-Jun-2024. Exploring Neuroprotective Potential of Unexplored Mint Extracts in Cypermethrin-Induced Neurotoxic Rats. Journal of Medicinal Food-Korea, JMF-2024-K-0214.

BOOK and CHAPTERS Published:

- 1) Masroor Ellahi Babar (Editor/Internal reviewer) and **ZAHID MUSHTAQ** (Co-author in chapter13). Chapter-13 Titled= "Clinical Biochemistry", A laboratory manual for Biochemistry (Basic concepts of Biochemistry). LAP LAMBERT

- Academic Publishing (February 08, 2012), 132 pages, ISBN-10: 3846597945, ISBN-13: 978-3846597941.(Book Published Chapter), <https://www.morebooks.de/store/gb/book/a-laboratory-manual-of-biochemistry/isbn/978-3-8465-9794-1>
- 2) Masroor Ellahi Babar (Editor/Internal reviewer) and **ZAHID MUSHTAQ** (Co-author in chapter7). Chapter-7 Titled= "Cloning Types and Applications", A laboratory manual of Molecular Biology (Practical Aspect of Molecular Biology). LAP LAMBERT Academic Publishing (November 09, 2011), 132 pages, ISBN-10: 3846504661, ISBN-13: 978-3846504666. <https://www.morebooks.de/store/gb/book/a-laboratory-manual-of-molecular-biology/isbn/978-3-8465-0466-6>
 - 3) Masroor Ellahi Babar (Editor/Internal reviewer) and **ZAHID MUSHTAQ** (Co-author in chapter10). Chapter-10 Titled= "Types of PCR and its Applications", Polymerase Chain Reaction: Principles, Applications and Troubleshooting. VDM Verlag Dr. Müller (August 17, 2011), 164 pages , ISBN-10: 3639377060, ISBN-13: 978-3639377064.(Book Published Chapter). <https://www.morebooks.de/store/gb/book/polymerase-chain-reaction/isbn/978-3-639-37706-4>
 - 4) M. Asif Hanif and haq nawaz bhatti (Edited by) and **ZAHID MUSHTAQ** (Authored & Co-author in chapter 10 and 11 respectively). "Chapter 10= Electrophoresis and potential driven chromatography" and "chapter 11= Gel exclusion chromatography". Book titled "**CHROMATOGRAPHY**". 2015. ISBN-13:978-969-23074-0-6, Published by International Scientific organization (www.iscientific.org). Pages 1-263. 6-07-2015
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 - 6) Bazgha Ijaz, Muhammad Asif Hanif, Muhammad Adnan Ayub, Asma Hanif, **ZAHID MUSHTAQ**. 20th Sep 2020. Chapter 2 titled,"Asthma Weed" pages 13-27 in Book titled, "Medicinal Plants of South Asia-1st edition-Novel sources of drug discovery", publisher Elsevier. <https://doi.org/10.1016/B978-0-08-102659-5.00002-1> . ISBN: 9780081026595, Pages 810. Editors= Muhammad Asif Hanif, Haq Nawaz, Muhammad Mumtaz Khan, Hugh J. Byrne. (Sciencedirect)
 - 7) Book title: Biodegradation and Biodeterioration at the Nanoscale. 1st edition. Editors; HaEz Iqbal, Muhammad Bilal, Tuan Anh Nguyen, Ghulam Yasin. Iqbal-BBN-1632749 ISBN:978-0-12-823970-4. Pages 1-500, Elsevier (**Published online 1st September 2021**). Chapter 23, titled," Effects of zeolite-based nanoparticles on the biodegradation of organic materials" Authors=Farooq Sher, Abu Hazafa, Tazien Rashid, Muhammad Bilal, Fatima Zafar, **ZAHID MUSHTAQ**, Zaka Un Nisa. Pages=27, DOI: <https://doi.org/10.1016/B978-0-12-823970-4.00021-X>
 - 8) **Title:** Medicinal Plants of Asia: Novel Sources for Drug Discovery. 2025. **Editors/Authors:** Farwa Nadeem, Muhammad Jilani, Muhammad Khan, Muhammad Asif Hanif, Shafaq Nisar, Shafiqur Rahman, Zahid Mushtaq. Publisher Elsevier.

PROCEEDINGS/ABSTRACTS:

- 1) Dr. Fridoon Jawad Ahmad, Waqas Ahmad and **ZAHID MUSHTAQ**. 2009. Stem Cell Technology and its Potential Application in Animal Sciences. Proceedings; National Conference on Role of Stem Cell Technology in Animal Sciences, IBBT, UVAS, Lahore. 4-5th December 2009: Page 35-39.
- 2) Muhammad Wasim, Masroor Ellahi Babar, **ZAHID MUSHTAQ**, Muhammad Asif. 2010. Stem cell technology. Proceedings of the 2nd International Symposium on Biomedical Materials, Current Research and Future Signpostings. Journal of Biomaterials and Tissue Engineering (The Royal Society of Chemistry)
- 3) Ali Raza Awan, Tanveer Hussain and **ZAHID MUSHTAQ**. 2010. Role of Bioinformatics in Development of Biopharmaceuticals/Biologics. Proceedings: National Conference on Bioinformatics - Opening up New Frontiers in Molecular Biology Research, IBBT, UVAS, Lahore. 14 – 15th May 2010: Page 62-65.
- 4) Muhammad Asif, **ZAHID MUSHTAQ** and Rashid Hussain. 2010. Isolation of DNA from non conventional samples. Proceedings; National conference on Animal Forensics: DNA Fingerprinting, IBBT, UVAS, Lahore. 21-22 September 2010: Protocols Page 37-38.
- 5) Kashif Jilani, **ZAHID MUSHTAQ**, Ghulam Mustafa, Amer Jamil and Muhammad Asgher. 2011. Molecular identification and phylogenetic analysis of *Rhodotorula mucilaginosa* from Pakistan by using ITS sequence. 22nd National chemistry conference, UAF.
- 9) Ghulam Mustafa, **ZAHID MUSHTAQ**, Amer Jamil. 2011. Isolation & Cloning of Actin & GAPDH genes from *Solanum nigrum*, *Tamarindus indica* and *Coriandrum sativum*. 10th international & 22nd National chemistry conference, UAF.
- 10) **ZAHID MUSHTAQ***, Ghulam Mustafa & Amer Jamil. 2012. Isolation and Cloning of Fibrinolytic Enzyme (qk) Gene from Local Isolate of *Bacillus* spp. 11th INTERNATIONAL and 23rd NATIONAL CHEMISTRY CONFERENCE . Held on OCTOBER 15-17, 2012 at NCE Physical Chemistry, University of Peshawar. Published in abstract book for poster presentation.
- 11) **Zahid Mushtaq**, Ghulam Mustafa, Amer Jamil. Comparative studies of fibrinolytic genes and their phylogenetic studies isolated from local *Bacillus* Specie. PP-136. Page # 120-21. International conference on Applications of Molecular Biology in Medicine and Agriculture"held on 20-22 August, 2013, BAQI , Qaid E Azam University, Islamabad, Pakistan.
- 12) Hina Awais, **Zahid Mushtaq**, Amer Jamil. "Isolation of Papain like cyteine proteases gene from selected Medicinal plants", 11th Biennial Conference of Pakistan Society for Biochemistry and Molecular Biology "Molecular Biosciences: Challenges and Opportunities" during November 25-28, 2013 to be held at University of the Punjab, Lahore, Pakistan.
- 13) Mubshara Saadia, Amer Jamil, Muhammad Ashraf, Tahira Iqbal, **Zahid Mushtaq**, Irfan Shoukat. A salt stress induced chloroplast cDNA from canola has similarity to carcinoma related-DNA sequences" in the "International Conference of

- Biochemical and Chemical Sciences” held on February 24-26, 2014 Organized by Dept of Chemistry & Biochemistry, University of Agriculture Faisalabad, Pakistan.
- 14) **Zahid Mushtaq**, Shakeel Akhter and Amer Jamil. Isolation of Camelysin, a metalloprotease gene from *Bacillus thuringiensis*, *Bacillus subtilis* and *Bacillus sphaericus*. in the “International Conference of Biochemical and Chemical Sciences” held on February 24-26,2014 Organized by Dept of Chemistry & Biochemistry , University of Agriculture Faisalabad, Pakistan.
 - 15) Shakeel Akhter, **Zahid Mushtaq** and Amer Jamil. Isolation of bacillokinase (BKII) a metalloprotease fibrinolytic gene from *Bacillus thuringiensis* and *Bacillus sphaericus*. in the “International Conference of Biochemical and Chemical Sciences” held on February 24-26,2014 Organized by Dept of Chemistry & Biochemistry , University of Agriculture Faisalabad, Pakistan.
 - 16) Usman Anayat, **Zahid Mushtaq**, Amer Jamil. “Comparative analysis of Prosystemin cDNA from *Solanum miniatum* with *Solanum nigrum*” in the “International Conference of Biochemical and Chemical Sciences” held on February 24-26,2014 Organized by Dept of Chemistry & Biochemistry , University of Agriculture Faisalabad, Pakistan.
 - 17) **Zahid Mushtaq**, Fateha Irshad, Shakeel Akhtar, Zobia Khalid and Amer Jamil. 2016. Bioinformatics Analysis of Camelysin Gene Isolated from Local *Bacillus thuringiensis*. Abstracts ICBBB-2016, page 149, February 22-24, University of Agriculture Faisalabad Pakistan.
 - 18) **Zahid Mushtaq** and Amer Jamil. 2016. Isolation and sequence analysis of a cyclotide gene (clotide) from local *Clitoria* plant. Abstracts ICBBB-2016, page 150, February 22-24, University of Agriculture Faisalabad Pakistan.
 - 19) Shehla Javaid, **Zahid Mushtaq**, Amer Jamil. 2016. Isolation and sequence analysis of defensin like genes (DEFL) from selected plants of Solanaceae family. Abstracts ICBBB-2016, page 154, February 22-24, University of Agriculture Faisalabad Pakistan.
 - 20) Zirwa Anwar, Zahid Mushtaq, Sameen Mumtaz. 2019. Isolation And Comparative Analysis of Defensin Like Gene (*DEFL*) From *Datura stramonium*. Poster presentation in “Third National Conference on Emerging Trends in Bioinformatics and Biosciences (NCETBB-19) held at Hazara University Mansehra from October 03-05, 2019. (**Abstract Published page 192 of Book**)
 - 21) Muhammad Tahir Shahzad, **Zahid Mushtaq***, Sadia Shabbir, Asma Nawaz. Aug 2021. Phytochemical and Biological Studies of Xylene and Ethyl Acetate Extract of *Withania Coagulans* and *Withania Somnifera* Leaves from Taunsa Sharif, Southern Punjab, Pakistan. Book of Abstracts: 1st International Hybrid Mode Conference on Emerging Innovate Reseach Trends in Biology (EIRTB-2021). Page 122. EIRTB2021-OVP-124.
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 - 23) Fatima Yaqoob, **Zahid Mushtaq***, Mirza Asad Azhar Baig, Arfa Qamar. August 2021. *In Vitro* Thrombolytic, Antimicrobial, Antioxidant and Cytotoxic Studies of Ethyl Acetate Extract of *Pinus Wallichiana* Needles from Azad Kashmir. Book of Abstracts: 1st International Hybrid Mode Conference on Emerging Innovate Reseach Trends in Biology (EIRTB-2021). EIRTB2021-PVP-64. Page 198.
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 - 28) Iqra Shehzadi, **Zahid Mushtaq***, Fatima yaqoob. 19th May 2022. Antibacterial activity of *Bacillus Licheniformis* BMRL02 extracts. Published in 1st one day National Confernce on Biology held on 19th May 2022. Organized Dept of Biotechnology and genetic engineering, Kohat University of Science and Technology. NCB-2022-PP-41 page number 32.
 - 29) Sundas iqbal, **Zahid Mushtaq**, Ayesha Sana, Amna Shahid, Asma Nawaz. 26-28 October, 2022. Antioxidant, enzyme inhibition, thrombolytic & cytotoxic activities of Xylene extract of *Euphorbia helioscopia*. Bio-P-155 Abstract book page 151, ICIRI-2022 conference UAF-Community PARS, UAF.
 - 30) Urwa Khalid, **Zahid Mushtaq**, Sana Fazil, Adeeba Ramzan, Munazza Saleem, and Noor ul Huda, and Ayesha Sana. 26-28 October, 2022. Synergistic And Antagonistic Effect Of Aqueous And Organic Extracts Of *Bacillus Licheniformis* Bmrl02 In Combination With Terbinafine. Bio-A-113. Abstract book page 118 , ICIRI-2022 conference UAF-Community PARS, UAF.
 - 31) **Zahid Mushtaq**, Ayesha Sana, Muhammad Shahram, and Maryam Yousuf. 26-28 October, 2022. Isolation And Chracterization Of Halotolerant Probiotic *Bacillus Licheniformis* BMRL-02. Bio-A-116. Abstract book page 120 , ICIRI-2022 conference UAF-Community PARS, UAF.

- 32) Ayesha Sana, Muhammad Shahid, **Zahid Mushtaq**, and Muhammad Asif Rafiq. 26-28 October, 2022. Evaluating Antibacterial Potential Of Tea Tree Oil Focusing On Biofilm And Quorum Sensing Inhibition Of Sinusitis Isolates. Bio-O-126. Abstract book page 128 , ICIRI-2022 conference UAF-Community PARS, UAF.
- 33) Noor Ul Huda, **Zahid Mushtaq**, Ayesha Sana, Natasha Erum, Sundas Iqbal, and Esha Asrar. 26-28 October, 2022. Effect Of Biofertilizers (Bacterial Strains) On Antifungal And Antioxidant Properties Of *Coriandrum Sativum*. Bio-P-170. Abstract book page 163, ICIRI-2022 conference UAF-Community PARS, UAF.
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- 35) Sonia Tabassum, **Zahid Mushtaq**, Ayesha Sana, Areeba Zaheer, and SherzaDayal. 26-28 October, 2022. Enzyme Inhibition And Thrombolytic Study Of Aqueous And Organic Extracts Of *Bacillus licheniformis* BMRL02. Bio-A-109. Page Number 139. ICIRI-2022 conference UAF-Community PARS, UAF.
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- 37) M. Ali, M. Huzaifa, Mudassir Hussain, Waqas Ali, **Zahid Mushtaq**. 2022. Hepatoprotective effect of *Terminelia chibula*, *Phyllanthus emblica*, their bioactive compounds Kaempferol Quercetin, using insilico , in vitro and in vivo models. PP-111 in "1st international conference on innovations in chemistry, Biochemistry, Biotechnology and Bioinformatics (ICBBB-2022)" held on 15-17 December 2022, organized by IOC Islamia university of Bahawalpur and Dept of chemistry Govt sadiq College Women Univeristy Bahawalpur.
- 38) Ayesha Sana, Zahid Mushtaq, Hafiza Ayesha Nawaz, Amna Shahid Awan, Areeba Zaheer. Halophilic bacteria and its applications in various fields. Page 8 on Abstract book. International Journal of Natural Medicine and Health Sciences (IJNMS). January 10th, 2023 International Conference on Recent Trends in Biological Sciences (RTB-2023). Volume-1 (2022). <https://journals.iub.edu.pk/index.php/ijnms/article/view/1550/645>.
- 39) Maham Siddiq, **Zahid Mushtaq**. Bioactive studies of extracellular and intracellular ethyl acetate extracts of *Bacillus clausii* KP 10. January 10th, 2023 International Conference on Recent Trends in Biological Sciences (RTB-2023). Page 14 on Abstract book. International Journal of Natural Medicine and Health Sciences (IJNMS). Volume-1 (2022) <https://journals.iub.edu.pk/index.php/ijnms/article/view/1550/645>.
- 40) Arslan Rasool, Samrah Nadeem, Muhammad Shahid, Bushra Akhtar, **Zahid Mushtaq** Muhammad Tjammal Rehman. Development of Bio-hybrid Hydrogels Comprising Chitosan-Gelatin Capped Guar Gum and Metallic Nanoparticles for Accelerated Excised Skin Wound in Rabbits: Structural and Biological properties. II OIC Youth Scientific Congress, 26-29th November 2023 organized in Kazan, Republic of Tatarstan .
- 41) Alisha Kanwal, Zahid Mushtaq*, Amna Shahid Awan, Arfa Arshad. Molecular identification of *Trichoderma Harzanium*. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 11, page 17).
- 42) Attika nageen, Zahid Mushtaq, Ayesha sana , kashif jilani, sundas, Evaluation of antimicrobial, antioxidant, cytotoxic activity from Xylene extracts of Saffron (*Crocus sativus*, stigma) 2 days int symposium on Recent advances in Life sciences, Organized by Dept of Biochemistry, 17-18 march, 2023
- 43) Abeesha Akmal, Zahid Mushtaq*, Muhammad Mohtashim, Ayesha Sana, Aniqah Shahid, Amna Shahid Awan. Biological evaluation of novel synthetic transition complexes of 1,3,4-oxadiazole derivatives using different *in-vitro* assays. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 16, page 22).
- 44) Muhammad Mohtashim, Zahid Mushtaq*, Ayesha Sana, Amna Shahid Awan. Optimization of cultural conditions for proteases production from *Bacillus clausii* kp10. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 21, page 26).
- 45) Amna Shahid Awan, Zahid Mushtaq*, Ayesha Sana, Muhammad Mohtashim. Screening of antimicrobial peptide gene(s) from *Fragaria nubicola* isolated from Azad Kashmir. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 22, page 27).
- 46) Syed Asif Hussain Shah, Zahid Mushtaq. Phytoremediation of selective textile dyes by *Marsilea quadrifolia*. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 23, page 27).
- 47) Ifra Khan, Zahid Mushtaq*, Amna Shahid Awan, Rohma Nadeem, Sabooha Shafique. Molecular identification of *Aspergillus* species and its antimicrobial and hemolytic activities. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 24, page 28).

- 48) Ruba Shahid, Zahid Mushatq*, Amna Shahid Awan, Ayesha Sana, Ramshah Iqbal, Muhammad Mohtashim. Molecular identification, enzyme inhibition and cytotoxicity evaluation of plant from genus *Fragaria* collected from Azad Kashmir. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 28, page 30).
- 49) Kainat Shahid, Zahid Mushtaq*, Muhammad Mohtashim, Mahnoor Fatima. Evaluation of anti-oxidant, anti-microbial and thrombolytic activities of *Fragaria Nubicola*. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 29, page 31).
- 50) Urwah Ahmad, Zahid Mushtaq*, Muhammad Mohtashim, Ayesha Sana, Irum Shahzadi. Optimization of carbon and nitrogen sources in biodecolorization of foron red dye (rdrbls) using *Bacillus clausii* KP10. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 40, page 38).
- 51) Areeba Zaheer, Zahid Mushtaq*, Amna Shahid Awan, Ayesha Sana, Kainat Urooj. Evaluation of the enzyme inhibition and thrombolytic activity from xylene extracts of saffron (*crocus sativus* l.) Stigmas. Two-Day International Symposium On Drug Discovery And Development, Organized by dept of Biochemistry, UAF on 1st to 2nd March 2024. (ISDDD 40, page 39).
- 52)

➤ Sequences Submitted (GenBank, NCBI)

- i. 593 bp region of ITS sequence for the identification of *Rodotorula mucilaginosa* (BankIt#1388120, Accession # HQ223037)
- ii. ITS1, 18S rDNA regions of *Rodotorula mucilaginosa* KJZM01 (GenBank accession HQ699732, 538 bp partial sequence of ITS1, 18S etc)
- iii. Partial gene sequence of QK gene for Subtilisin from local *Bacillus subtilis* isolate, partial CDS (Accession# JQ927217)
- iv. Glycine max Trypsin Inhibitor Protein (KTI) gene, partial CDS. BankIt1835988 Seq1, Accession number=KT232255
- v. Camelysin (calY) gene sequence from *B.Thuringensis* genomic DNA, complete CDS. BankIt1828802 Seq1, Accession number= KT023597
- vi. *Clitoria ternatea* Clotide (a Cyclotide) complete gene, genomic Sequence submission BankIT1804710, Accession-KP889219
- vii. Accession # KT371458 Complete CDS of Defensin-like gene DEFL from *Datura Stramonium* of local origin
- viii. BankIt1852615 Seq1 KT630860 HMG-CoA synthase gene from *Brassica Juncea* of Euphorbiaceae family
- ix. 16s rRNA gene for the identification of *Bacillus clausii* KP10 an extremophilic alkalophile from hot springs of Tattapani Poonch Azad Kashmir SUB-ID-1431041 Seq1 and accession number= KX013388.1
- x. *Bacillus clausii* strain KP10W 16S ribosomal RNA gene, partial sequence, accession number= KX447508.1
- xi. Precursor cyclotide from *Viola tricolor*, BankIt1938305, accession number KX602289, KX640116
- xii. Cyclotide from indigenous *Viola odorata* (banafsha), Cyclotide partial gene sequence, accession number KX589270.
- xiii. Juniperus sp. NE-2017 isolate Pakistan internal transcribed spacer 1, partial sequence; 5.8S ribosomal RNA gene, complete sequence; and internal transcribed spacer 2, partial sequence, KY463269, SUB2318094.
- xiv. Alkaline protease Apr gene from *Bacillus clausii* KP10 submission BankIt is: 2248066 Apr, Accession# MN229513 1157 bp complete gene.
- xv. *Withania Coagulans* Ribulose 1,5-Bisphosphate carboxylase/oxygenase, Partial gene (BankIt2417207 Accession No. MW459164)
- xvi. Isolation and identification of endophytic bacteria (*Bacillus licheniformis* BMRL02) from *Dalbergia sissoo* using 16SrRNA gene SUB9030679 Seq1 Accession # MW564082. + SUB9058083 Seq1 MW586043
- xvii. *Triticum aestivum* Tad1 mRNA for defensin, partial CDS 145 bp. BankIt2419562 Accession No. MW498386
- xviii. *Euphorbia helioscopia* ribulose-1,5-bisphosphate carboxylase/oxygenase large subunit (rbcL) gene, partial cds; chloroplast. ACCESSION No. MZ708964
- xix. Partial sequence of Lichenysin A synthetases gene from *Bacillus licheniformis* BMRL02. Submission ID 2599143, Accession No. ON931604 (dated 06-07-2022) 363 bp
- xx. Partial sequence of lchAA gene from *Bacillus Claussii* KP10. Submission ID 2600312, Accession No. ON931605 (dated 06-07-2022) 359 bp
- xxi. Thaumatin-like Protein sequence from *Fragaria nubicola* from Azad Kashmir. SubmissionID 2732294-1. AccessionNo. OR415848. (8th August 2023) 372 bp.
- xxii. Chloroplast *Marselia quadrifolia*, 540 bp, 13th dec-23, OR903153,
- xxiii. Partial ITS1 /2 sequence for identification of *Aspergillus niger* isolate BMRL03. Accession No. OR388786. 517 bp. 8th August 2023.
- xxiv. *Halobacillus* (16s rRNA based identification of a halotolerant bacteria), Accession No. PP874672/PP859456, SUB14509635, dated 6-06-2024
- xxv. RBCL gene OR453942 (507 bp chloroplast *Fragaria Nubicola*), Defensin gene OR453943 (139 bp, *Fragaria Nubicola*) 17th Aug-23,

- xxvi. matK OR399558, 5th Aug-23, 851 bp chloroplast *Fragaria Nubicola*
- xxvii. 16s rRNA gene OR922561, 908 bp, *Bacillus subtilis* strain BMRL 04
- xxviii. *Trichoderma Harzianum* strain BMRL06, ITS 574 bp, OR884226
- xxix. *Brevundimonas naejangsanensis* BMRL 05, 1381bp, Nov-23, 16s rRNA gene, OR758771
- xxx. *Virgibacillus massiliensis* strain BMRL-09 16S ribosomal RNA gene, partial sequence, GenBank: PQ312716.1, 1261bp, 17th sep-24
- xxxi. *Halobacillus trueperi* strain BMRL-07-A 16S ribosomal RNA gene, partial sequence, GenBank: PP859456.1, 546 bp, 13-JUN-2024
- xxxii. *Halobacillus trueperi* strain BMRL-07-B 16S ribosomal RNA gene, partial sequence, GenBank: PP874672, 547 bp, 13-JUN-2024
- xxxiii. *Bacillus licheniformis* strain BMRL-10 lichenysin synthetase A (lichA) gene, partial cds, GenBank: PV031707, 317 bp DNA, 01-MAR-2025

Projects as PI/Co-PI

- Co-Principal investigator in HEC (National research program for Universities) project entitled, “Bioactive Cyclotides and their Genes from some Indigenous Medicinal Plants”. UAF Endst. No. Acs. Dev/1003801/28281-84 dated 06-10-16. (Proposal identification number 3210), 7.693 Million Rupees.

Awards/Prizes/Achievements

- Awarded 2nd Prize in Poster Competition in “2nd international conference of Biochemistry, Biotechnology and Biomaterials”, organized by Dept of Biochemistry, UAF, 9-11 Dec, 2018.
- 3rd position in a poster competition held on 2nd May 2019 organized by Directorate of academics and teaching resource centre, university of Agriculture, Faisalabad.
- Awarded HEC-IRSIP 6 months scholarship during PhD study as Lecturer-UAF tenure (2014)

Supervised as faculty:

- Till Present completely supervised >45 M.Sc + BS Hons Biochemistry students (16) and >100 M.Phil Biochemistry students, Currently supervising 2 PhD students.
- and as **member** of different students within Biochemistry, Chemistry, NIFSAT & other university departments of M.Sc/M.Phil/PhD in UAF > 200

Research Topics/students Supervised

1. Shameem Akhtar Jamil (2006-ag-112): Isolation and sequence analysis of a gene encoding trypsin inhibitor (TI) protein from selected Fabaceae plants.
2. Shakeel Akhtar (2009-ag-873): Isolation of bacillo kinase (BKII), a fibrinolytic gene from *Bacillus thuringiensis* and *Bacillus sphaericus*.
3. Hina Awais (2011-ag-515): Isolation of papain-like cysteine proteases (PLCPs) gene from selected medicinal plants.
4. Sumera Sarwar (2012-ag-524): Isolation and screening of different plants for the presence of HMG-CoA synthase gene.
5. Zobia Khalid (2013-ag-794): Bioactive potential of organic and aqueous extracts of *Petunia axillaris* leaves.
6. Sidra Anwar (2015-ag-1014): Evaluation of bioactive potential of different polar and non-polar fractions of *Clitoria ternatea* leaves.
7. Fateha Irshad (2012-ag-682): Isolation of a lipopeptide gene from local isolates of *Bacillus* species.
8. Umair Waqas (2013-ag-514): Isolation and characterization of asparaginyl endopeptidase gene from Fabaceae family selected plants.
9. Natasha Erum (2013-ag-782): Isolation and identification of catalase-producing extremophilic bacteria from hot springs of Poonch, Azad Kashmir.
10. Syed Husnain Raza Shah (2013-ag-1241): Evaluation of pharmacological potential of selected synthetic compounds using different in vitro assays.
11. Minhaj Ahmad (2013-ag-1996): Clinical survey of β -thalassemic patients in local population of Islamabad.
12. Zobia Khalid (2013-ag-794): Data mining and sequence analysis of camelysin gene isolated from *Bacillus thuringiensis*.
13. Faiza Maqsood (2014-ag-799): Isolation of cyclotide gene(s) from selected indigenous Violaceae plants.
14. Usama Khan (2014-ag-2424): Evaluation of bioactive potential from alcoholic and aqueous extracts of *Clitoria ternatea*.
15. Munaza Maqsood (2014-ag-937): Bioactive potential of organic and aqueous extracts of *Escherichia coli*.
16. Farzana Nighat (2014-ag-2081): Bioactive potential of organic and aqueous extracts of *Bacillus clausii* KP10.

17. Mehwish Alam (2015-ag-1156): Screening of protein disulfide isomerase gene(s) from selected plants of Poaceae family.
18. Nimrah Seher (2015-ag-2261): Purification of ethyl acetate extract of *Bacillus clausii* KP10 for the assessment of its biological activity.
19. Chanda Anum (2015-ag-1493): Bioinformatic analysis of defensin and defensin-like gene from *Datura stramonium*.
20. Rabia Kainat (2015-ag-789): Biological activities of nanoparticles of eucalyptus essential oil.
21. Maham Siddiq (2015-ag-949): Cyclic peptides and their applications.
22. Sameen Mumtaz (2015-ag-1955): Application of bioinformatics tools in molecular biology.
23. Oswa Fatima (2015-ag-656): Cloning of fibrinolytic enzymes.
24. Nimra Seher (2015-ag-2261): Recombinant expression of bioactive peptides.
25. Chanda Anum (2015-ag-1493): Isolation of bioactive compounds from *Bacillus clausii* KP10 at different pH.
26. Sameen Mumtaz (2015-ag-1955): Molecular identification and evaluation of enzyme inhibition potential of selected plants of Azad Kashmir.
27. Maham Siddiq (2015-ag-949): Bioactive studies of extracellular and intracellular ethyl acetate extract of *Bacillus clausii* KP10.
28. Oswa Fatima (2015-ag-656): Isolation and purification of bioactive fractions from *Cassia glauca* lam leaves.
29. Zirwa Anwar (2015-ag-2262): Bioinformatic analysis of defensin-like gene (DEFL) sequence from *Datura stramonium*.
30. Hina Awais (2015-ag-17): Bioinformatics analysis of HMG-CoA synthase gene sequence from *Brassica rapa*.
31. Shameem Akhtar Jameel (2015-ag-17): Isolation and bioinformatics analysis of Kunitz trypsin inhibitor gene from *Glycine max*.
32. Asma Nawaz (2016-ag-1383): Identification of selected medicinal plants of Azad Kashmir based on DNA markers.
33. Umer Khayam (2016-ag-1303): Enzyme inhibition studies of ethyl acetate extract of *Pinus wallichiana* needles.
34. Aqsa Anum Bhatti (2016-ag-516): Evaluation of enzyme inhibition, antibacterial, and phytochemical potential of leaf extracts of *Viola odorata*.
35. Ayesha Jabbar (2016-ag-70): Meta quantitative trait locus (QTL) analysis of fiber quality traits in upland cotton.
36. Abeera Yaqood (2016-ag-74): Extraction and evaluation of bioactive fractions from eggs of *Gallus gallus domesticus* (Uni Gold breed).
37. Muhammad Shahram Tanveer (2016-ag-4974): Isolation and characterization of endophytic bacteria from *Dalbergia sissoo*.
38. Areeba Iftikhar (2016-ag-937): Evaluation of acetylcholinesterase inhibition and antioxidant activity of selected indigenous plants from Azad Kashmir.
39. Iram Amir (2016-ag-598): Evaluation of bioactive fractions extracted through organic and aqueous solvent from *Hamelia patens* leaves.
40. Nayila Ayub (2016-ag-2765): Enzyme inhibition studies by bioactive fractions of *Cassia glauca* lam leaves.
41. Nimra Sehar (2016-ag-2829): Purification of ethyl acetate extract of *Bacillus clausii* KP10 for the assessment of its biological activity.
42. Muaza Zafar (2016-ag-3212): Antibacterial and enzyme inhibition activities of seed extract from *Momordica charantia* based on phytochemical analysis.
43. Marya Zaka (2016-ag-3211): Estimation of antioxidant, thrombolytic, and antifungal potential of seed extracts of *Momordica charantia* based on phytochemical analysis.
44. Sadia Shabbir (2016-ag-2063): Synergistic antimicrobial studies of bioactive organic and aqueous fractions of *Cassia glauca* lam leaves.
45. Mahnoor Malik (2016-ag-3703): Screening of selected antimicrobial peptides from plants of Poaceae, Fabaceae, and Solanaceae families.
46. Maryam Rahmat (2016-ag-3035): The role of cyclotides in Rubiaceae family.
47. Nayila Ayub (2016-ag-2765): Cyclotides from Violaceae plants.
48. Muhammad Shahram Tanveer (2016-ag-4974): The role of cyclotides in Fabaceae family.
49. Sadia Shabbir (2016-ag-2063): Study of cyclotides in Solanaceae family.
50. Muqadas Amjad (2016-ag-2516): Cyclotides and their role in Poaceae family.
51. Mahnoor Malik (2016-ag-3707): The roles of cyclotides in Cucurbitaceae plant family.
52. Maryam Rahmat (2016-ag-3035): Isolation of candidate genes of cyclotides from selected plants of Poaceae.
53. Natasha Erum (2016–Present): Screening and molecular studies of cyclotides from flora of Azad Kashmir. (PhD thesis submitted 25-08-2023)
54. Tehreem (2016-ag-18): Evaluation of antifungal, antioxidant, and thrombolytic potential of the organic leaf extracts of *Viola odorata*.
55. Shehnaz Akhtar (2017-ag-3050): Synergistic effects of organic and aqueous extracts of *Bacillus clausii* KP10 on antimicrobial and antioxidant properties
56. Nida Talat (2017-ag-2992): Bioinformatic analysis of Kunitz trypsin inhibitor (KTI) from *Glycine max*
57. Umay Habiba (2017-ag-3074): Evaluation of bioactive fraction from eggs of *Gallus gallus domesticus* by antifungal & enzyme inhibition studies
58. Mariam Rahmat (2017-ag-3092): Isolation of candidate genes of cyclotides from selected plants of Poaceae
59. Memoona Zaib (2017-ag-0478): *Bacillus clausii* genome sequence analysis of ENTPRo strain

60. Sadia Sadiq (2017-ag-3342): Isolation and characterization of asparaginyl endopeptidase (AEP) gene(s) from selected Poaceae and Solanaceae plants
61. Yusra Irfan (2017-ag-3340): Determination of *in-vitro* antioxidant activity of flavonoids extracted from parsley (*Petroselinum crispum*)
62. Ayesha Rauf (2017-ag-2934): Evaluation of hepatoprotective potential of flavonoids extracted from *Psoralea corylifolia* leaves against oxidative stress induced by cypermethrin in rats
63. Zofishan Rao (2017-ag-3042): Investigation of antioxidant effects of flavonoids on liver of rat exposed to organophosphorous pesticide
64. Arfa Qamar (2017-ag-0417): Isolation of mannanase gene from *Bacillus clausii* KP10 and its bioinformatics analysis
65. Wajiha Mushtaq (2017-ag-3374): Wastewater treatment and dye sequestration using magnetic composite as adsorbents for removal of dyes
66. Mirza Asad Azhar Baig (2017-ag-0431): Biodecolorization of Foron dyes using *Bacillus clausii* KP10
67. Maha Maqsood (2017-ag-0457): Isolation of defensin and snakin-genes from *Populus deltoides*
68. Aleena Akram (2017-ag-0482): Fibrinolytic activations and inhibitors
69. Shahid Iqbal (2017-ag-0484): Safe use of popular medicinal plants
70. Saima Kanwal (2017-ag-4755): Whole genome sequence analysis of *Bacillus clausii*
71. Farheela Shafqat (2017-ag-0454): Defensins and thionins in plants
72. Maha Maqsood (2017-ag-0457): Lipase inhibition
73. Atia Alahe (2017-ag-0428): Technical report on genetic data of *Tribulus terrestris*
74. Wareesha Ahmad (2017-ag-0487): Antioxidants from plants
75. Muhammad Hayat (2017-ag-3387): Isolation of alkaline protease gene(s) from *Bacillus clausii* KP10
76. Sonia Nazir (2017-ag-3385): Isolation of cyclotide gene(s) from selected plants of Poaceae family
77. Muddasar Saeed (2018-ag-4091): Biosorption of chromium using *Bacillus clausii* KP10
78. Arfa Iftikhar (2018-ag-4113): Screening of selective antimicrobial peptide genes from *Bacillus clausii* KP10
79. Nayab Arshad (2018-ag-4150): Isolation of antimicrobial peptide (AMP) genes from *Bacillus clausii* KP10
80. Muhammad Imran Iqbal (2018-ag-4062): Identification and phylogenetic analysis of selected medicinal plants from Southern Punjab
81. Muhammad Rizwan (2018-ag-4726): In vitro synergistic or antagonistic antioxidant studies of bioactive fractions of *Cassia glauca* leaves
82. Ghulam Murtaza (2018-ag-0540): Enzymes used in drugs (enzymes as drugs)
83. Aiman Shabbir (2018-ag-4090): Isolation of lipase gene from *Bacillus clausii* KP10
84. Maida Saeed (2018-ag-4126): Characterization studies to evaluate probiotic potential of *Bacillus clausii* KP10
85. Muhammad Tahir Shahzad (2018-ag-4129): Phytochemical and biological studies of xylene and ethyl acetate extract of *Withania coagulans* and *Withania somnifera* leaves
86. Soha Mubeen Mughal (2018-ag-529): Probiotics and their uses
87. Mariam (2018-ag-593): Grafted peptides and proteins and their scope
88. Sahir Qasim (2018-ag-0549): Cyclic proteins other than cyclotides
89. Muqaddas Manzoor (2018-ag-0559): Microbes present inside plants
90. Hina Ashraf (2018-ag-0560): Housekeeping genes
91. Hira Yasin (2018-ag-0516): Synergetic effect of plants, microbes, and drugs
92. Hassan Ahmad Yahya (2018-ag-0557): Assays for studying enzyme inhibition and activation
93. Sonia Tabassum (2018-ag-0332): Cyclotides
94. Maryam Yousuf (2019-ag-2363): Characterization studies to evaluate the probiotic potential of *Bacillus licheniformis* BMRL02
95. Sana Fazil (2019-ag-2334): Synergistic or antagonistic effect of fat-soluble vitamins (E, D3, and K1) on antimicrobial activity of antibiotics
96. Arooba Zainab (2019-ag-2359): Isolation of antimicrobial peptide genes (AMPs) from *Bacillus licheniformis* BMRL02
97. Saman Farooq (2019-ag-2350): In vitro synergistic or antagonistic antioxidant studies of different extracts of *Withania somnifera* and *Withania coagulans* leaves
98. Fatima Yaqoob (2019-ag-2317): In vitro thrombolytic, antimicrobial, antioxidant, and cytotoxic studies of ethyl acetate extract of *Pinus wallichiana* needles
99. Maham Mubarak Choudary (2019-ag-2344): Synergistic effects of organic and aqueous extracts of *Bacillus licheniformis* BMRL02 antioxidant properties
100. Sherza Dayal (2019-ag-2358): Enzyme inhibition studies of ethyl acetate and xylene extracts of *Withania coagulans* and *Withania somnifera*
101. Iqra Shehzadi (2019-ag-2313): Antibacterial activity of *Bacillus licheniformis* BMRL02 extract
102. Sehrish Khan (2014-ag-2340): Biological potential of cyclotides producing plants
103. Shiza Shakeel (2013-ag-1958): Cyclic peptides as stable bioactive molecules
104. Tasneem Kausar (2014-ag-1569): Isolation and characterization studies of cyclotide genes and their products
105. Areesha Ashfaq (2014-ag-8266): Genes of fibrinolytic agents
106. Sadia Iftikhar (2020-ag-1257): Synergistic and antagonistic effect of vitamins with terbinafine

107. Adeeba Ramzan (2020-ag-1306): Synergistic and antagonistic antibacterial studies of *Bacillus Licheniformis* BMRL 02 extracts
108. Atika Nageen (2020-ag-1259): Evaluation of antimicrobial, antioxidant, and cytotoxic activity from xylene extracts of saffron (*Crocus sativus*) stigmas
109. Noor ul Huda (2020-ag-1271): Effect of biofertilizer (bacterial strains) on antifungal and antioxidant activity of *Coriandrum sativum*
110. Mishal Shafique (2020-ag-1289): Optimization of conditions for amylase production from *Bacillus clausii* KP10
111. Ume Aaemen (2020-ag-1267): Evaluation of antioxidant thrombolytic in enzyme inhibition activities of *Nigella sativa* from Patoki
112. Munazza Saleem (2020-ag-1339): Effect of vitamins E, K1, and D3 on antibacterial activity of gentamicin
113. Urwa (2020-ag-1334): Evaluation of the antifungal activity of aqueous and organic extracts of *Bacillus Licheniformis* BMRL02
114. Abdul Karim (2020-ag-1337): Optimization of carbon and nitrogen sources in biodecolorization of foron turquoise dye using *Bacillus clausii* KP10
115. Muhammad Zubair (2020-ag-1334): Isolation of protease gene from *Bacillus licheniformis* BMRL02
116. Faiza Shehzadi (2020-ag-1341): Isolation of bacillomycin, fengycin, gallidermin, and zwittermicin from *Bacillus clausii*
117. Sundas Iqbal (2020-ag-1338): Antioxidant, enzyme inhibition, thrombolytic, and cytotoxic activities of xylene extract of *Euphorbia helioscopia*
118. Zoha Jamil (2020-ag-1368): Screening of selective antimicrobial peptide genes from *Bacillus Licheniformis*
119. Sonia Tabassum (2018-ag-332): Enzyme inhibition and thrombolytic study of aqueous and organic extracts of *Bacillus Licheniformis* BMRL02
120. Raza Ahmed Khan (2020-ag-1346): Optimization of temperature and pH in biodecolorization of foron red dye using *Bacillus clausii* KP10
121. Esha Asrar (2020-ag-1315): Screening of terpene synthase in *Bacillus Licheniformis*
122. Sabeen (2020-ag-): Effect of biofertilizers (bacterial strains) on antibacterial activity of *Coriandrum sativum* and its phytochemical analysis
123. Maida Hina (2020-ag-535): Evaluation of antimicrobial and cytotoxic activities from xylene extract of *Nigella sativa*
124. Ayesha Sana (2017-ag-438): Molecular studies on halophilic bacteria for antimicrobial peptides/proteins
125. Amna Shahid Awan (2021-ag-1917): Screening of antimicrobial peptides from *Fragaria nubicola* isolated from Azad Kashmir
126. Muhammad Mohtashim (2021-ag-1879): Optimization of cultural conditions for protease production from *Bacillus clausii* KP10
127. Faiza Muzammal (2021-ag-1775): Molecular identification of *Bacillus subtilis* by 16S rRNA and antimicrobial activities
128. Huma Kareem Saqib (2021-ag-1807): Evaluation of antimicrobial potential of *Vigna radiata* grown on decolorized foron turquoise
129. Mahnoor Fatima (2021-ag-1811): Optimization of cultural condition for amylase production from *Bacillus licheniformis* BMRL02
130. Muhammad Faizan (2019-ag-2662): Molecular identification and antimicrobial potential of *Marsilea quadrifolia* and *Lemnoideae*
131. Ruba Shahid (2021-ag-1793): Molecular identification, enzyme inhibition, and cytotoxic activity of the genus *Fragaria* from Azad Kashmir
132. Syeda Asif Hussain Shah (2021-ag-1822): Phytoremediation of selective textile dyes of *Marsilea quadrifolia*
133. Urooj Khan (2021-ag-1821): In-vitro antimicrobial and antioxidant evaluation of novel synthetic transition metal complexes of 1,3,4-oxadiazole derivatives
134. Urwah Ahmed (2021-ag-1783): Optimization of carbon and nitrogen sources in biodecolorization of Foron red dye (RDRBLS) using *Bacillus clausii* KP10
135. Abeesha Akmal (2021-ag-1858): Biological evaluation of novel synthetic transition of 1,3,4-oxidiazole derivatives using different in-vitro assays
136. Amna Bibi (2021-ag-1895): Molecular identification of *Shigella* bacteria and its antimicrobial activities
137. Aneela Naik (2021-ag-2813): Synergistic and antagonistic effects of ampicillin in combination with vancomycin and rifampicin against bacteria
138. Areeba Zaheer (2021-ag-1875): Evaluation of enzyme inhibition and thrombolytic activity from xylene extracts of saffron (*Crocus sativus*) stigmas
139. Arfa Arshad (2021-ag-1922): Molecular identification of *Trichoderma* species and its antimicrobial activities
140. Ifra Khan (2021-ag-1894): Molecular identification of *Aspergillus* species and its antimicrobial activities
141. Kainat Shahid (2021-ag-1905): Evaluation of antioxidant, antibacterial, and thrombolytic activities of *Fragaria nubicola*
142. Maira Rauf (2021-ag-1849): Evaluation of bioactive potential of *Vigna radiata* grown on decolorized foron turquoise
143. Rida Anwar Shah (2021-ag-1885): Optimization of cultural conditions for cellulose production from *Bacillus licheniformis*
144. Saman Tahira (2021-ag-1780): Allelopathic effect of *Euphorbia helioscopia* on selected plants of *Helianthus annuus* and chickpea
145. Hunzaira Khatoon (2022-ag-8566): Flavonoids and phenolic compounds as antioxidants

146. Fatma Sahar Uraf Maryam (2020-ag-8557): Production and optimization of biodetergent from fungal species
147. Muhammad Ahmad (2020-ag-8590): Potential application of halophilic bacteria
148. Muhammad Hamza (2020-ag-8593): Halophilic microbes or bacteria as potential sources of bioactive molecules
149. Muhammad Muizz Shahid (2020-ag-8600): Antimicrobial peptide in extremophilic bacteria
150. Hamna Chaudary (2020-ag-8467): Polymerase Chain Reaction; its types and applications
151. Zahra Zafar (2020-ag-8744): Cyclotides from extremophytes
152. Hurmat-e-Amna (2020-ag-8712): Antioxidant peptide of extremophilic plants
153. Hafsa Saeed (2022-ag-8710): Synergism and antagonism of drugs
154. Afifah Anwar (2020-ag-8535): Purification, characterization, and immobilization of protease by extremophilic bacteria
155. Eisha Saeed (2020-ag-8555): Application of protease in different industries
156. Bismah Zafar (2020-ag-8704): Industrial application of amylase from bacteria
157. Minhail Noor (2020-ag-8584): Molecular characterization of amylase from bacterial species
158. Sidra Rafiq (2020-ag-8739): Purification, characterization, and immobilization of amylase from extremophilic bacteria
159. Ghulam Abass (2020-ag-8708): Cloning of lipase enzymes from extremophiles bacteria
160. Uqba Sarfraz (2020-ag-8687): Different strategies for gene cloning in the lab
161. Ayesha Bibi (2020-ag-8697): Biotechnological applications of halophiles
162. Maham Aqeel (2020-ag-8720): Production and optimization of protease from thermophilic bacteria/Bacillus species
163. Maryam Eman (2020-ag-8723): Molecular markers and biochemical tests for identification
164. Saif-Ul Rahman (2020-ag-8612): Allelopathy and its effects on plants
165. Rohma Nadeem (2022-ag-2032): Evaluation of the antioxidant, thrombolytic enzyme inhibition, and hemolytic activity from organic and aqueous extracts of *Aspergillus niger*
166. Kainat Urooj (2022-ag-1949): Evaluation of antimicrobial and antioxidant activity of methanol and petroleum ether extracts of *Ocimum sanctum* seeds and its synergistic effect with commercial antibiotics
167. Nimra Seed (2022-ag-1982): Synergistic or antagonistic interaction of cinnamic acid and tannic acid with conventional antibiotics against selected bacteria
168. Ayesha Abass (2022-ag-2053): Optimization of culture conditions for the production of protease from *Bacillus subtilis*
169. Mahnoor Fatima (2022-ag-1984): Evaluation of antioxidants, enzyme inhibition, thrombolytic, and hemolytic activities of aqueous and organic extracts of *Bacillus subtilis* BMRL04
170. Hussan Bin Umar (2022-ag-1985): Isolation and identification of halophilic bacteria and characterization of its probiotic potential
171. Aniq Shahid (2022-ag-2036): Optimization of culture conditions for protease from *Bacillus licheniformis* BMRL02
172. Aiman Irfan (2022-ag-2047): Optimization of cultural conditions for amylase production from *Aspergillus Niger* BMRL03
173. Irum Shahzadi (2022-ag-2002): Phytoremediation of navy blue dye by *Marsilea quadrifolia*
174. Saba Noreen (2018-ag-5415): Isolation and identification of halophilic bacteria and screening of its antimicrobial peptides
175. Laiba Farman (2022-ag-2027): Synergistic and antagonist effect of Flozin combination on antioxidant and hemolytic activities
176. Farah Naz (2022-ag-2046): Evaluation of antimicrobial, enzyme inhibition, thrombolytic, and hemolytic activities of *Lemna minor*
177. Sadia Bibi (2022-ag-1988): Isolation, identification, and characterization of halophilic bacteria and evaluation of its bioactive potential
178. Amna Shahid Awan (2021-ag-1917): Bioactivity profiling and molecular study of antioxidant peptides from selective halophytes (Ph.D.)
179. Sabooa Shafique (2021-ag-2773): Molecular studies of amylases from thermophilic bacteria and its industrial application (Ph.D.)
180. Muhammad Mohtashim (2021-ag-1879): Molecular studies on proteases from thermophilic bacteria and its industrial application (Ph.D.)
181. Faiza Muzammal (2021-ag-1775): Molecular studies of halophilic bacteria as biofertilizers (Ph.D.)
182. Filza Hamd (2023-ag-1232): Biological synthesis of copper nanoparticles and evaluate its potential by antimicrobial activities
183. Aiza Gull (2019-ag-9438): Optimization of cultural conditions for protease production from *Halobacillus trueperi* through RSM
184. Sana Walyat (2023-ag-1286): Synergistic and antagonistic antimicrobial study of Flozin
185. Hafiza Tania Fatima (2019-ag-9481): Evaluation of the role of *Aspergillus niger* BMRL03 as a biofertilizer
186. Faiqa Khalid (2019-ag-9468): Identification and characterization of bioactive compounds from halophytes
187. Azka Naveed (2019-ag-9460): Optimization of amylase production from *Bacillus subtilis* through RSM
188. Ruhma Farooq (2019-ag-9560): Biosorption of copper using *Bacillus subtilis* BMRL04
189. Menahil Nisar (2023-ag-1236): Antimicrobial activities of Flozin drugs in combination with antibiotics
190. Aiza Iqbal (2023-ag-1280): Evaluation of antioxidant, antifungal, enzyme inhibition, and thrombolytic potential of triazole derivatives
191. Insha Urooj (2019-ag-9491): Synergistic and antagonistic effects of tannic acid and cinnamic acid on antioxidant and thrombolytic activity of ciprofloxacin and tetracycline
192. Javeria Mushtaq (2019-ag-9494): Thrombolytic and enzyme inhibitory activities of Flozin drugs

193. Iqra Naeem (2019-ag-9492): Determination of antioxidant activity (FRAP, DPPH), cytotoxicity, thrombolytic, and enzyme inhibition activity of amidrazone drugs
194. Anam Zulfiqar (2023-ag-1276): Evaluation of bioactive potential of DPP-4 inhibitors (Sitagliptin, Linagliptin)
195. Vishah Fatima (2023-ag-1250): Bioactivities of ethanol extracts of several species of genus *Syringa*

Manuscripts/projects reviewed as reviewer & Assoc. editors of Journal:

- Journal= *Microscopy and Microanalysis* (Cambridge university Press), Article= Antimicrobial and Scanning Electron Microscopic (SEM) studies of *Dicranopteris linearis* Extracts (**Manuscript ID= MAM-12-268**).
- Journal= European Journal of medicinal plants, Article= Assessment Of The Biochemical Effects Of *Picralima Nitida* Seed Saponin Extracts On Rats (**ID=2013-EJMP-3388**)
- Journal= International Journal of Chemical and Biochemical Sciences (*International scientific Oraganization*) Article= Insecticidal and oviposition inhibition efficacy of *Capparis decidua* to *Sitophilus oryzae* Linn. (Coleoptera: Curculionidae). (**Manuscript# IJCBS-12-02- 05**)
- Journal= Pakistan Journal of Pharmaceutical sciences= Regular Reviewer of many manuscripts since 2017.
- Journal of Animal and Plant Sciences, Manuscript # Biot-19-0058a (Received and sent in March 2020)
- **Projects reviewed:** HEC-NRPU-10896 + 11421, titled, “Synthesis And Characterization Of Novel Veterinary Nano-Medicine For Prevalent Bovine Mastitogen” & “Development Of Indegenous Herbal Medicine Through Cell Based Trials Of *Calotropis Procera* As Treatment Of Theileriosis In Livestock” under 2019 call for HEC-NRPU Projects. (April, 2020)
- Associate editor of Journal of Biochemistry, Biotechnology & Biomaterials JBBB published by Biochemical society, dept of Biochemistry, UAF.
- Member editorial board Section editor: The Pakistan Journal of Agricultural Science PAKJAS (from 2024 till present).

Conferences/ workshops/ seminars/ trainings/resource person/ organizers:

- i. All Pakistan food science conference 2006, UAF, Faisalabad, Pakistan.
- ii. 1st International symposium on genomics, proteomics and metabolomics (recent trends biotechnology 22-23rd Oct 2007) held in Department of Microbiology & and Molecular Biology, PUNJAB UNIVERSITY (P.U), Lahore, Pakistan. (**Certificate awarded as a participant**)
- iii. 18th National Chemistry conference, Chemical Society of Pakisatn, held in Institute of chemistry, PU, Lahore, Pakistan. 25-27th Feb, 2008. (**Certificate awarded as a participant**)
- iv. 9th biennial conference on advances in Biochemistry & Molecular Biology, PSBMB, held in Arid University Rawalpindi, Islamabad. (**Oral presenter**)
- v. Attended as a participant one-day symposium on insect genomics in NIBGE, 2009.
- vi. National Conference on Role of Stem Cell Technology in Animal Sciences, IBBT, UVAS, Lahore. 4-5th December 2009
- vii. Workshop on “Construction of a Standard MCQ” held on 20th March, 2010.
- viii. National Conference on Bioinformatics - Opening up New Frontiers in Molecular Biology Research, IBBT, UVAS, Lahore. 14 – 15th May 2010 (**Certificate awarded as a member organizing committee**)
- ix. National workshop on Animal Forensics: DNA Fingerprinting, IBBt, UVAS, Lahore. 21-22 September 2010. (**Certificate awarded as a participant**)
- x. National Biotechnology Exhibition and Seminar 2010 held on 20-21st Oct, 2010 at Institute of Biochemistry and Biotechnology, University of veterinaey and Animal Sciences, Lahore. (**Certificate awarded as a member Accommodation, Transport and guest protocol committees**)
- xi. Postgraduate Student Orientation program, 28th September-8th October 2010. (**Qualification certificate for PhD Admission**)
- xii. Workshop in Practical Training in “Propagation of New Castle Disease Virus in Chicken Embryos and Detection of its Immunogenic proteins using SDS-PAGE. 12-15 July, 2010. Department of Microbiology, UVAS, Lahore.
- xiii. Quantitative Detection of Antibiotics in Broiler meat on HPLC (07- 08 January, 2011) At Quality Operations Laboratory (QOL, UVAS)
- xiv. National workshop at IBBt, UVAS entitled, “**Molecular Diagnostics**” on 11-12 of January, 2011.

- xv. Participated in International Conference on “Latest techniques for conservation of animal genetic resources in Pakistan” 14-15th September, 2011 organized by Institute of Biochemistry & Biotechnology, University of veterinary & animal sciences, Lahore.
- xvi. Organizing Committee Member + Participant of “ 10th International & 22nd National Chemistry Conference” November 21-23, 2011 organized by Dept. of Chemistry & Biochemistry, University of Agriculture, Faisalabad
- xvii. Participated in “National Science Conference: Roadmap of cutting edge technologies” January 10-12, 2012 oragnized by Pakistan Academy of Sciences, Islamabad, Arid Agiculture University Rawalpindi.
- xviii. Completed training on title, “Training course on Supercritical fluid Extraction Technique: Isolation of Functional & Nutritional Food Components” held on October 20-22, 2012 Organized by National institute of food science & Technology, University of Agriculture, Faisalabad, Pakistan. (Funded By USAID project & HEC)
- xix. Resource Person on Practical training on DNA isolation, PCR and AGE (Agarose gel electrophoresis) in the “HEC workshop on Imparting Practical Training in Molecular & Biochemical Techniques” held on November 27-Dec 1st ,2012 Organized by Dept of Chemistry & Biochemistry , University of Agriculture Faisalabad, Pakistan.
- xx. Member Organizing Committee in the “HEC workshop on Imparting Practical Training in Molecular & Biochemical Techniques” held on November 27-Dec 1st ,2012 Organized by Dept of Chemistry & Biochemistry , University of Agriculture Faisalabad, Pakistan.
- xxi. Training certificate by Central Hi-Tech Laboratory on “Gas Chromatography” held on 03-09-2012 to 08-09-2012 University of Agriculture Faisalabad.
- xxii. Training certificate by Central Hi-Tech Laboratory on “High Pressure Liquid Chromatography (HPLC)” held on 30-07-2012 to 04-08-2012 University of Agriculture Faisalabad.
- xxiii. Participated in One day awareness workshop on “Genotyping By Sequencing, Overview and its application in crop improvement” February 4th, 2013, held at National Institute for Biotechnology & Genetic engineering (NIBGE), Faisalabad.
- xxiv. Participant of series of workshop for co-tutors titled, “Learning by Doing: Tools & Techniques for working as a team” held May 2, 3,6 and 7th ,2013, by Office of the Senior Tutor, UAF, Faisalabad.
- xxv. Participated in “ International conference on Applications of Molecular Biology in Medicine and Agriculture”held on 20-22 August, 2013, BAQI , Qaid E Azam University, Islamabad, Pakistan.
- xxvi. Participated in “1st International Conference on Applied Chemical, Biological and Agricultural Sciences (Education & Science Expo) (ICACBAS 2014)” held on February 18-20, 2014, *Organized by:* Faculty of Science and Technology, Government College University, Faisalabad, Pakistan.
- xxvii. Member Organizing Committee (Transportation, Accommodation and Publication) in the “International Conference of Biochemical and Chemical Sciences” held on February 24-26, 2014 Organized by Dept of Chemistry & Biochemistry, University of Agriculture Faisalabad, Pakistan.
- xxviii. Participated and certificate awarded in Training titled on, “General Lab Safety Course” (Per Title 8, CCR Section 5193) held on 12th June 2014 organized by Environmental Health and Safety Division, SOTO office, University of southern california, Los Angeles, USA.
- xxix. Attended an international conference on title, “Moving Targets 2014, New Horizons in Anti-cancerous Therapeutics” held on 22nd August 2014, organized by **American Association of Pharmaceutical Scientists** (School of pharmacy, dept of phamacology and pharmacuetical sciences, University of southern california, LA). Venue: **Radisson Hotel Los Angeles Midtown at USC** 3540 S Figueroa St.Los Angeles, CA 90007, USA.
- xxx. Resource person in “workshop on Bioactive peptides/ proteins”. Held on March 27-28, 2015. Organized by Dept of Biochemistry, University of Agriculture, Faisalabad, Pakistan. (Pak-US science and technology programme, HEC).

- xxxvi. Attended grant writing workshop, “Grant writing workshop, competitive grants program” held on 1st June, 2015. Oorganised by U.S-Pakistan centers for Advanced Studies in Agriculture/Food security. Resource person Prof. Thomas L. Rost (Prof Emeritus, UC Davis, USA).
- xxxvii. Participated in “Biosafety training workshop for young scientists” held on 13th June 2015, organized by National Acedmy of Young Scientists NAYS and Dept of Biochemistry, University of Agriculture, Faisalabad, Pakistan.
- xxxviii. Participated in “7th National seminar for capacity building of CAM practitioners” and “Demonstration activity of Silymarin extraction”. Held on 27th February, 2015, organized by Department of Biochemistry, University of Agriculture, Faisalabad.
- xxxiv. Participated and conference management committee as organizers (transportation, accommodation, registration and scientific committees) in International conference of Biochemistry, Biotechnology and Biomaterials ICBBB-2016, titled , “ Biochemistry for better food, health and environment in the developing world” held on 22-24 Feb 2016, University of Agriculture, Faisalabad.
- xxxv. Participated and member organizing in Tibbi Seminar on Tibb, Nature and Science, held on 21st August 2016, at University of Agriculture, Faisalabad. Organized by National Council for Tibb.
- xxxvi. Participated in one day workshop on “Strategic Use of Digital Technology in University Instruction”, on 17th October 2016 Organized by U.S.-Pakistan Centre for Advanced Studies in Agriculture & Food Security, University of Agriculture, Faisalabad.
- xxxvii. Participated in “Technical and Patent writing”, 28th Jan, 2017 conducted by Department of Chemistry, UAF.
- xxxviii. Capacity building Workshop on “ Biosafety, Measures in Agriculture”, Organized by ORIC, UAF on February 20-21st 2017.
- xxxix. Member Organizing committee (transport and Accomodation) 2nd international conference of Biochemistry, Biotechnology and Biomaterials, organized by Dept of Biochemistry, UAF, 9-11 Dec, 2018.
- xl. Member Organizing committee (transport and Accomodation), “International symposium on technologies & materials for renewable energy, environment & sustainability” organized by dept of chemistry, 6-7 Feb 2019.
- xli. Presented poster titled, “Molecular identification of plant species” in “one day Poster Competition among the Teaching Assistants/ Postgraduate Students” organized by Directorate of Academics and Teaching Resource Center, UAF held on 2nd May, 2019.
- xlii. Participated in 2nd national conference on “Future Med-2019” held on 22-23 August 2019 organized by Faculty of medical and health sciences, University of Sargodha, Sargodha.
- xliii. Certificate of participation in one day seminar on “Slow pace of Agricultural Biotechnology Adaptability: The Analysis and Way forward” on 10th October 2019 organized by UAF with Pak Biotechnology Information Centre PABIC and Int. Centre for chemical and Biological sciences ICCBS, Karachi.
- xliv. Participated in one day international symposium on,”Intellectual Disabilities and Brain Health” held on 13th December 2019 organized by Dept of Biochemistry, Govt College University Faisalabad, Pakistan.
- xlv. Poster session resource person. Track 1 of Creative & effective scientific writing posters in ,”Research, Scientific & Technical (RSCITECH-2020) Writting” held of 27th -28th February, 2020 organized by Dept of Chemistry, UAF.
- xlvi. One day workshop as organizing member on “Fundamentals of Laboratory Biosafety” organized by dept of Biochemistry, UAF in collaboration with Pakistan Biological Association Punjab Chapter (PBSA) on 24th February, 2020.
- xlvii. Participated in “faculty orientation training program for universities” organized by Punjab-HEC for newly appointed assistant professors and lecturers held on October 19-23rd, 2020.
- xlviii. Participated in “Primer designing using bioinformatics tools” on August 8th , 2021 organized by World Forum of Young Scientists in association with Biotech Scientific Brand, IonCure Heathcare Company and CXAI technology. (E-Certificate awarded)

- xlix. Participated/ oral presenter in 1st international hybrid mode conference on “Emerging innovative research trends in biology”. Organized by Dept of Biotechnology & genetic engineering, Kohat university of science and technology, Kohat 26000, Pakistan on August 11-12, 2021. (E-certificate awarded for presentation and 6 abstracts published)
- I. Participated in online webinar on “Advances in Regenerative Medicines” on August 22nd 2021, organized by World Forum of Young Scientists in association with Boston biolife, USA. (E-certificate awarded)
- li. Participated in COMSTECH - ICCBS International Workshop on "Chemical Safety & Security in Academic and Industrial Laboratories". Held on 24-25th August 2021 in COMSTECH secretariat Islamabad, Pakistan. (Virtual participation)
- lii. Participated in one day workshop on “Discovering the innovative progressions in catalysis”, held on 20th December, 2021, organized by Dept of chemistry, UAF.
- liii. Participated in 3 days training on “professional development of young faculty”, 23rd Nov to 25th Nov 2021 organized by Directorate of Academics, UAF.
- liv. Member organizing committees in “National training workshop on ELISA based Diagnostics” held on 26-05-2022 organized by dept of biochemistry, UAF.
- lv. Participated in 2 days symposium on “Writing science & leveraging scientific research (WSLSR-2022)” dated 2-3 march, 2022 organized by Dept of Chemistry, UAF. (Abstract also published)
- lvi. Participated in 1 day international symposium on “What we need to know about Human Genetic Disorders?” held on 21st March, 2022 organized by Dept of Biochemistry, GC university Faisalabad.
- lvii. Resources person and Organizing member in Logistics and registration committee as Convener in “2nd two days training workshop on Bioassays for exploration of Bioactivities” held on 25-26th of October 2021 organized by dept of Biochemistry, UAF.
- lviii. Participated and 2 posters presented in “4th National symposium on Advances in Biotechnology: Trends, challenges and opportunities” held on March 2nd-3rd 2022, organized by dept of Bioinformatics and Biotechnology, GCUF, Faisalabad.
- lix. Participated in 1st international conference on innovations in chemistry, biochemistry, biotechnology and bioinformatics (ICBBB-2022), organized by Inst of biochemistry, biotechnology and bioinformatics & institute of chemistry , the islamia university of Bahawalpur, 15-17th December 2022. (Abstract published)
- lx. Participated in awareness seminar regarding 4th call for projects proposals under hec-technology development fund at uaf on dec 7th 2022.
- lxi. **Resource Person and member organizing committee of logistics and accomodation** in “3rd two days training workshop on Bioassays for exploration of Bioactivities” held on 22-23rd of november 2022 organized by dept of Biochemistry, UAF.
- lxii. **Participated and member organizing committee** on “symposium on Nutritional Biochemistry”, held on 17th of October 2022 organized by dept of Biochemistry, UAF.
- lxiii. **Participated and member organizing committee** on training “Basic tools of Bioinformatics for Molecular Biology and Biomedical research” held on 12-14th Dec, 2023, Dept of Biochemistry, UAF
- lxiv. **Participated and member organizing committee**, on 2 day int symposium “Recent trend in Life sceince” held on 17th to 18th march 2023. Dept of Biochemistry, UAF
- lxv. **Resource Person and Organizer** of 3 days training on “Antimicrobial assays for drugs assessment” in **Nicolaus Copernicus University in Toruń**, UMK, Bydgoszcz, Poland held on 25-27 November 2024.

Languages

CHINESE, English, Urdu, Punjabi.

REFERENCES:

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