

Curriculum Vitae

Name: Asia Khatoon

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Date of Birth: 18-04-1976

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Academic Record

Certificate/Degree	Major Subject	Marks /CGPA	%age	Board/University
SSC	Science	650/850	76.47	Faisalabad
HSSC	Pre-Med	605/1100	55	Faisalabad
B.Sc.	Chemistry, Zoology, Botany	458/800	57.25	University of The Punjab, Lahore
M.Sc	Botany	3.61/4.0	75.75	University of Agriculture, Faisalabad
B.Ed	Biology, Chemistry	705/1100	64	University of The Punjab, Lahore
M.Phil	Biotechnology	82.5 4/4	82.5	NIBGE (Quaid-e- Azam University, Islamabad)
PhD	Biotechnology	3.93		NIBGE (Pakistan Institute of Engineering and Applied Sciences)

Assistant Professor at Permanent Position

Working as assistant professor at permanent position in the Institute of Botany, University of the Punjab since May 8, 2023. Specialization field is Agricultural Biotechnology.

Visiting Faculty

After successful completion of one year contract agreement under IPFP, HEC (5-4-2019 to 4-4-2020) in School of Biochemistry and Biotechnology (SBB), University of the Punjab. I am working as visiting faculty in SBB, University of the Punjab from 6th April, 2020 to date.

Assistant Professor SBB, PU under IPFP, HEC

One year contract agreement as Assistant Professor under IPFP, HEC has completed successfully at School of Biochemistry and Biotechnology (IBB), University of the Punjab. I was appointed as Assistant Professor from April 5, 2019 to April 4, 2020. All the duties as Assistant Professor were performed as per rule. I took BS and MSc classes in each available semester during my one-year contract period. I also co-supervised two MPhil and one BS students in research work under the title of i. "Cloning and expression of *CryIAc* gene in *E. coli*", ii. "Molecular Cloning and Sequence Analysis of *Brazzein* gene in *E. coli* and iii. "Sequence Characterization and Expression Studies of Mutant Brazzein Gene in *Escherichia coli*."

Ph.D Research:

Thesis Title: "Development and evaluation of cotton transgenics for improved fiber traits".

Salient features of research

1. Selection of *expansin*, *sucrose synthase* and *aquaporin* genes based on their expression studies in cotton (*G. hirsutum*) and *C. procera*
2. Construction of cotton transformation vectors containing the *Expansin*, *Sucrose synthase* and *Aquaporin* gene cassettes.
3. Optimization of *Agrobacterium* mediated apex embryo transformation method for cotton using the constructs developed in these studies.

Other Research Experience

1. M.Sc Research

Department of Botany, University of Agriculture, Faisalabad

Thesis Title: Effect of salinity on growth and yield of sunflower (*Helianthus annuus* L.)

2. M.Phil Research

Agricultural Biotechnology Division, NIBGE, Faisalabad (February 2005- 2007).

Thesis Title: Construction of *Calotropis procera* fiber cDNA library and comparison of its *Expansins* with cotton fiber *Expansin* family.

Salient features of research:

- Construction of *Calotropis procera* fiber cDNA library
- Screening and isolation of full length expansin genes from the cDNA library
- Plant expression vector construction for stable insertion of expansin genes into cotton.

3. Scientific Officer, CCRI Multan

Responsibilities as regular employee at Central Cotton Research Institute, Multan (January 2001- November 2004).

- Conventional breeding for the development of new cotton lines for improvement of fiber characteristics
- Chromosomal studies on roughed plants of cotton
- Cotton tissue culture
- Maintenance of 52 species of cotton

4. Contractual Research Experience

1. Worked as researcher in the MinFA project entitled, 'Improvement of cotton fiber through transgenic technology', (June, 2007 to December 31, 2009) at Plant Biotechnology Division, NIBGE, Faisalabad.

Salient features of research

- Development of cotton and *Calotropis* fiber EST's
- Screening and isolation of fiber development specific genes
- Expression profiling of *expansin* and *aquaporin* genes in cotton and *C. procera*.
- Cotton transformation with *C. procera* *expansin* and *aquaporin* genes

- Analysis of transgenes in the developing cotton calli
2. Worked as Research Officer (April 2010-September 2013) under PARB project entitled, “Development of wheat with low phytate for increasing bioavailability of iron and zinc”, at Agricultural Biotechnology Division, NIBGE, Faisalabad. This project is being conducted with the collaboration of FCC (A chartered University), Lahore

Salient features of research

- Development of plant transformation vectors with single and double phytase gene expression cassettes
- PCR and RT-PCR for the screening of putative transgenics
- qPCR for expression analysis of transgenic lines

5. Conferences and workshops

- i) Oral presentation was given in International Conference on Recent Innovations in Molecular Sciences held in November 2019, PU Lahore.
- ii) Participated in National Dialogue on Ag-Biotech for Food Security and Capacity Building of Biosafety Regulators held in December 2019, FCCU, Lahore
- iii) Attended two workshops on handout training on Modern Techniques in Biotechnology and Capacity Building in Biosafety of GM Crops: GMOs Detection held in April and June 2004.

6. Patents submitted:

- 1) Aftab Bashir, **Asia Khatoon** and Muhammad Usman Aslam. (2009). *Calotropis procera PIP1* and *PIP2* genes and the coded proteins there off. Application No. 1208/2009 dated 30-12-2009.
- 2) Aftab Bashir, **Asia Khatoon** and Muhammad Chragh. (2009). *Calotropis procera TIP1* and *TIP2* genes and the coded proteins there off. Application No. 1209/2009 dated 30-12-2009.

7. Publications:

1. **Khatoon A.**, Hussain, M. K. and Sadiq, M. (2000). Effect of salinity on some growth parameters of cultivated sunflower under saline conditions. *International Journal of Agriculture and Biology*. 2(3):210-213.
2. **Khatoon A.**, Qureshi, M. S. and Hussain, M. K. (2000). Effect of salinity on some yield parameters of sunflower (*Helianthus annuus* L.). *International Journal of Agriculture and Biology*. 2(4):382-384.

3. Anjum, Z. I. and **Khatoon, A.** (2003). Chilling effect of germination and seedling vigor of some cultivated species of *Gossypium*. *Asian Journal of Plant Sciences*. 2(3):297-299.
4. Naseer, H.M., Iqbal, N., **Khatoon A.**, Bashir A., Zafar, Y. and Malik, K. A. (2010). Molecular characterization and transcriptome profiling of EXPANSIN genes isolated from *Calotropis procera* fibers. *Electronic Journal of Biotechnology* [online]. Vol.13 No. 5, September 15, 2010, <http://www.ejbiotechnology.cl/content/vol13/issue6/full/7/7.pdf>
5. Naseer, H. M., **Khatoon A.**, Bashir A. and Malik, K. A. (2010). Effect of different antimicrobial agents on the fiber development of *in vitro* cultured cotton ovules. *Pak. J. Bot.*, 42(2): 4235-4242.
6. Bajwa, K.S., Shahid, A.A., Rao, A.Q., Kiani, M.S., Ashraf, M.A., Dahab, A. A., Bakhsh, A., Latif, A., Azmat, M., Khan, U., Puspito, A.N., **Aftab A.**, Bashir, A. and Hussnain, T. (2013). Expression of *Calotropis procera* expansin gene CpEXPA3 enhances cotton fiber strength. *Australian Journal of Crop Science*. 7(2):206-212.
7. Aslam, U., **Khatoon, A.**, Cheema, H.M.N. and Bashir, A. (2013). Identification and characterization of plasma membrane aquaporins isolated from fiber cells of *Calotropis procera*. *Journal of Zhejiang University SCIENCE-B*. 14(7):586-595.
8. Bajwa, K.S., Shahid, A.A., Rao, A. Q., Bashir, A., **Aftab, A.** and Husnain, T. (2015). Stable transformation and expression of *GhEXPA8* fiber expansin gene to improve fiber length and micronaire value in cotton. *Frontiers in Plant Science* 6(838):1-13 www.frontiersin.org/Journal/Abstract.aspx?s=1277&name=plant_biotechnology&ART_Doi=10.3389/fpls.2015.00838.
9. Bacha, S., **Khatoon, A.**, Asif, M., Yuan, J. and Bashir, A. (2015). Identification and analysis of an efficient dicot constitutive promoter from tomato. *Pak. J. Bot.*, 47(3): 1115-1120.
10. Bacha, S., **Khatoon, A.**, Asif, M., Yuan, J. and Bashir, A. (2015). Deletion analysis of Susy-SI promoter for the identification of optimal promoter sequence. *Pak. J. Bot.*, 47(4): 1287-1292.
11. Iqbal, N., **Khatoon, A.**, Asif, M. and Bashir, A. (2016). Expression analysis of fiber related genes in cotton (*Gossypium hirsutum* L.) through Real Time PCR. *Pak. J. Bot.*, 48(3): 1099-1106.
12. Masood, A., Iqbal, N., Mubeen, H., Naqvi, R.Z., **Khatoon, A.** and Bashir, A. (2016). Cloning and expression analysis of alcohol dehydrogenase (*Adh*) hybrid promoter isolated from *Zea mays*. *African J. Biotechnology*, 15(42):2384-2393.
13. Abid, N., **Khatoon, A.**, Maqbool, A., Irfan, M., Bashir, A., Asif, I., Shahid, M., Saeed, A., Brinch-Pedersen H. and Malik K.A. (2017). Transgenic expression of phytase in wheat endosperm increases bioavailability of iron and zinc in grains. *Transgenic Res*. 26:109–122.
14. Naqvi, R.Z., Asif, M., Saeed, M., Asad, S., **Khatoon, A.**, Amin, I., Mukhtar, Z., Bashir, A., and Mansoor, S. (2017). Development of a Triple Gene *Cry1Ac-Cry2Ab-EPSPS* Construct and Its Expression in *Nicotiana benthamiana* for Insect Resistance and Herbicide Tolerance in Plants. *Frontiers in Plant Sciences*, 8:1-9.

15. **Khatoon, A.**, Iqbal, N., Asif, M., Cheema M. N., Saeed, S. and Bashir, A. (2018). Comparative analysis of fiber morphogenesis genes of *Calotropis procera* and *Gossypium hirsutum*. *Int. J. Agri. Biol.* 20(2): 288-296.
16. Wajid , B., Anwar F., Wajid I., Nisar H., Meraj S., Zafar A., Aishawaqfeh K. M., Ekti A. R., **Khatoon A.**, Suchodolski Jan S., (2022). Music of metagenomics-a review of its applications, analysis pipeline, and associated tools. *Functional and integrative Genomics*, 22(5): 1-18.