Dr. Muhammad Zafar Saleem is experience in establishing operational optimization across diverse Applied Plant Molecular Biology and Biotechnology research field on both department and national levels. Abilities for talents in strategy development and providing research/science vision and teaching. Converts strategic plans into tactical reality through establishing sufficient human resources. Devises and implements new programs and initiates successful processes to produce new products with maximum impact to Applied Plant Molecular Biology and Biotechnology in Pakistan.

Dr. M. Zafar Saleem

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Ph.D. (Molecular Biology) CEMB, University of the Punjab, Lahore.	**2018**
M.Phil. (Molecular Biology) CEMB, University of the Punjab, Lahore.	**2011**
M.Sc. Botany Islamia University of Bahawalpur	**1994**
B.Sc. (Botany, Zoology & Chemistry) University of the Punjab, Lahore	**1992**
F.Sc. (Pre-Medical)	**1988**
SSC. (Science)	**1986**

SPECIALIZATION AND EXPERSITISES IN APPLIED MOLECULAR BIOLOGY

- Extensive experience of research and teaching in Applied Molecular Biology.
- 127 *Bacillus thuringeinesis* (Bt) isolates from all over Pakistan from different sources like soil, animal dung and cultivated fields were grown and their crystal proteins were used for SDS-PAGE Bt crystals Protein profiles, later on these Bt crystal proteins were characterized for biological controls of different insects on crops .
- DOUBLE-Bt GENE (CryIAc and Cry*IIa*) construct was developed and use for genetic transformation in crops (Cotton, Sugarcane and Rice) and this construct was used for the development of Traceable CEMB-Klean Cotton Transgenic Technology for third world countries.
- Genetic transformation and characterization of different tolerance genes in crop plants species (Rice, Tobacco, Potato, sugarcane and Cotton).
- Development of recombinant antigens in *E.coli*, Yeast, plant and animal cell lines for production of polyclonal antibodies as a tool for transgenes detection in GMO crops.
- Plant DNA Barcoding central facility developed for molecular identification of medicinal plants, Algae and Fungi.
- Production of Molecular Biology tools in CEMB/CAMB, *Taq* DNA polymerase, Hind*III,* Pst*I,* Eco*RI,* Bam*HI* (Recombinant Restriction Enzymes) and Lambda DNA molecular markers as gel stranded were produced according to research labs demands.
- Bioinformatics analysis of Nucleic acids, Amino acids and Protein homology and structuring.
- Active research supervision, publication and conference participation with oral and poster presentations.

PUBLICATIONS:

No.	Details of Publication	Impact factor
1.	Rao, A.Q., Hussain, S.S., Shahzad, M.S., Bokhari, S.Y.A., Raza, M.H., Rakha, A., Majeed, A., Shahid, A.A**.,** **Saleem, Z**., Husnain, T. and Riazuddin, S., 2006. Somatic embryogenesis in wild relatives of cotton (Gossypium Spp.). *Journal of Zhejiang University Science B*, *7*(4), pp.291-298.	3.066
2.	Rashid, B., **Saleem, Z.,** Husnain, T., & Riazuddin, S. (2008). Transformation and inheritance of Bt genes in Gossypium hirsutum. *Journal of Plant Biology*, *51*(4), 248-254.	2.156
3.	Rao, A. Q., Irfan, M., **Saleem, Z.,** Nasir, I. A., Riazuddin, S., & Husnain, T. (2011). Overexpression of the phytochrome B gene from Arabidopsis thaliana increases plant growth and yield of cotton (Gossypium hirsutum). *Journal of Zhejiang University SCIENCE B*, *12*(4), 326-334.	3.066
4.	Wattoo, J. I., **Saleem, M. Z.,** Shahzad, M. S., Arif, A., Hameed, A., & Saleem, M. A. (2016). DNA Barcoding: Amplification and sequence analysis of rbcl and matK genome regions in three divergent plant species. *Advancements in Life Sciences*, *4*(1), 03-07.	0.5
5.	Yousaf, M. Z., Idrees, M., **Saleem, Z**., Rehman, I. U., & Ali, M. (2011). Expression of core antigen of HCV genotype 3a and its evaluation as screening agent for HCV infection in Pakistan. *Virology journal*, *8*(1), 1-7.	2.465
6.	Majeed, R. A., Shahid, A. A., Ashfaq, M., **Saleem, M. Z**., & Haider, M. S. (2016). First report of Curvularia lunata causing brown leaf spots of rice in Punjab, Pakistan. *Plant Disease*, *100*(1), 219-219.	4.438
7.	Khan, M. A., Makhdoom, R., Husnain, T., **Saleem, M. Z**., Malik, K., Latif, Z., ... & Riazuddin, S. (2001). Expression of Bt gene in a dicot plant under promoter derived from a monocot plant. *Pakistan Journal of Biological Sciences*, *4*(12), 1518-1522.	1.04
8.	Hussain, S. S., Makhdoom, R., Husnain, T., Saleem, Z., & Riazuddin, S. (2008). Toxicity of snowdrop lectin protein towards cotton aphids Aphis gossypii (Homoptera, Aphididae). *Journal of Cell and Molecular Biology*, *7*, 29-40.	y
9.	Jahangir, G. Z., Sadiq, M., Hassan, N., Nasir, I. A., **Saleem, M. Z**., & Iqbal, M. (2016). The effectiveness of phosphate solubalizing bacteria as biocontrol agents. *Journal of Animal and Plant Sciences*, *26*(5), 1313-19.	0.529
10.	Wattoo, J. I., Iqbal, M. S., Arif, **M., Saleem, Z**., Shahid, M. N., & Iqbal, M. (2015). Homology modeling, functional annotation and comparative genome analysis of GBSS enzyme in rice and maize genomes. *International Journal of Agriculture and Biology*, *17*(5).	0.889
11.	Javeed, S., Almas, M., Shahid, M., Sumrin, A., Bashir, H., Bilal, M., **Saleem, M.Z.,** Jahangir, G. Z**.**, Afzal, S., Idrees, M., Amin, I. (2017). *Nrf2: A Master Regulator of Cellular Defense Mechanism and A Novel Therapeutic Factor*. Pakistan Journal of Biotechnology 14(1): 121-126.	0108
12.	Awan, A. R., Babar, M. E., Ahmad, A., **Saleem, Z**. A. Z., & Zahoor, Y. (2011). Phylogenetics and Evolutionary Association of Hepatitis B Virus Isolated from Pakistan. *Pakistan Journal of Zoology*, *43*(1).	0.924
13.	Fatima, S., Bajwa, R., Anjum, T., & **Saleem, Z**. (2012). Assessment of genetic diversity among different indigenous Xanthomonas isolates via RAPD and ISSR. *Archives of Biological Sciences*, *64*(1), 307-319.	0.956

14. Fatima, S., Bajwa, R., Anjum, T., & **Saleem, Z**. (2012). Assessment of genetic diversity among different indigenous Xanthomonas isolates via randomly amplified polymorphic DNA (RAPD) and inter simple sequence repeat (ISSR). *African Journal of Microbiology Research*, *6*(9), 1947-1957. 0.675

15. Qamar, Z., Tariq, M., Rehman, T., Iqbal, M. S., Sarwar, M. B., Sharif, M. N., M.Z.Saleem... & Rashid, B. (2019). Trackable CEMB-Klean Cotton Transgenic Technology: Afforadable Climate Neutral Agri-biotech Industrialization for Developing Countries. *Advancements in Life Sciences*, *6*(3), 131-138. 0.5

16. Jahangir, G. Z., Naz, S., Khan, M. I., & **Saleem, M. Z.** (2018). Rapid RNA Extraction from Eucalyptus tree and its down processing for cloning of dehydrin genes. *Advancements in Life Sciences*, *5*(4), 185-191. 0.5

17. **MZ SALEEM**, AM FAROOQ, IA NASIR, Q ALI, T HUSNAIN. (2017). COLD TOLERANCE OF PLANT ANTIFREEZE PROTEINS: A REVIEW International Journal of Biology, Pharmacy and Allied Sciences (IJBPAS) 6 (6), 1262-1275. 1.318

18. Majeed, R. A., Shahid, A. A., **Saleem, M. Z**., Asif, M., Zahid, M. A., & Haider, M. S. (2016). First Report of Curvularia tuberculata Causing Brown Leaf Spot of Rice in Punjab, Pakistan. *Plant Disease*, *100*(8), 1791-1791. 4.438

19. SHAFIQUE, F., ALI, Q., **SALEEM, M. Z**., BHATTI, T. Y., ZIKREA, A., SAIFULLAH, S. A., & MALIK, A. (2021). EFFECT OF MANGANESE AND CHROMIUM TOXICITY ON GROWTH AND PHOTOSYNTHETIC PIGMENTS OF MAIZE. *PLANT CELL BIOTECHNOLOGY AND MOLECULAR BIOLOGY*, 58-64. 0379

20. **SALEEM, M. Z.**, SAEED, Y., ARIF, N., MUNIR, H., AHMAD, S., HADI, F., & ALI, Q. (2021). PHYSIOCHEMICAL ANALYSIS AND PROTEIN MODELLING OF POTATO PROTEINS INVOLVED IN TUBERIZATION. *PLANT CELL BIOTECHNOLOGY AND MOLECULAR BIOLOGY*, 54-64. 0.379

21. **SALEEM, M. Z.**, ABBAS, J., SAIF, S., AHMAD, S., AHMAD, N., AHMED, W., TAHIR, M., & ALI, Q. (2021). PHYSIOCHEMICAL ANALYSIS OF SNAKIN 1 PEPTIDE IN FAMILY SOLANACEAE. *PLANT CELL BIOTECHNOLOGY AND MOLECULAR BIOLOGY*, *22*(15-16), 74-84. 0.379

22. Shahbaz, A., Hussain, N., **Saleem, M. Z**., Saeed, M. U., Bilal, M., & Iqbal, H. M. (2022). Nanoparticles as stimulants for efficient generation of biofuels and renewables. *Fuel*, *319*, 123724. 6.609

Total impact factor: 35.314

Citations: 307

h-index: 7

i10-index: 6

DNA Sequences discovered and Published in NCBI/GenBank

GenBank: KY457328.1; GenBank: MF503837.1; GenBank: MF503480.1; GenBank: MF498900.1 GenBank: MF498511.1; GenBank: KF644378. ; GenBank: KF644377; GenBank: KF644376.1; GenBank: KP940576.1; GenBank: KR704891.1; GenBank: KF613576.1; GenBank: MF445300.1;GenBank: MK130988

Awards/Appreciations:

- Performance Evaluation Award (PU) 2017-18
- Performance Evaluation Award (PU) 2016-17
- Performance Evaluation Award (PU) 2015-16

Incharge Research Labs:

- Heading Plant Molecular Biology and Biotechnology Group of CAMB University of the Punjab Lahore.
- Heading Enzyme Production CAMB University of the Punjab Lahore.
- Heading GMO Testing Lab.

Approved Supervisor:

Ph.D. Supervisor Approved by the Higher Education Commission, Islamabad Pakistan.

Teaching Courses (M.Phil. and Ph.D.):

Plant Molecular Biology; Advances in Plant Molecular Biology and Biotechnology; Cell and Tissue Culture; Molecular Biology techniques; Edible plant Vaccines and advances in Recombinant Protein purification; Bioinformatics.

Research Supervision

M. Phil & Ph.D. Thesis SUPERVISED:

S.#	Name of Student and session	M.Phil./Ph.D.	Title of Thesis
1.	Afzaal Hussain Shah 2015-17	M.Phil.	Molecular identification of freshwater microalgae
2.	Qindeel Fatima 2016-18	M.Phil.	Cloning and *in silico* Studies of Osmotin like protein gene from local Brassica juncea
3.	Fatima Arshad 2016-18	M.Phil.	Cloning and Expression studies of Osmotin like protein gene from Solanum nigrum in *Eschericha coli*
4.	Sumaia Saif 2017-19	M.Phil.	Cloning of *Zea mays* PR-1 Gene and its Physiochemical analysis
5.	Javaria Abbas 2017-19	M.Phil.	CLONING OF SNAKIN-2 GENE FROM POTATO MICROTUBERS AND ITS

			BIOINFORMATICS STUDIES
6.	Nauman Ahmad 2017-19	M.Phil.	Cloning and physiochemical Study of Osmotin gene from Nightshade plant
7.	Sidqa Zafar 2018-20	M.Phil.	PCR AMPLIFICATION OF rbcL PLANT GENETIC MARKER FROM GENOMIC DNA OF SOME MEDICINAL PLANTS AND THEIR PHYLOGENETIC ANALYSIS
8.	Noureen Zahara 2018-20	M.Phil.	PLANT GENETIC MARKER matK FOR MOLECULAR IDENTIFICATION OF EDIBLE PLANTS FRUITS AND THEIR PHYSIOCHEMICAL ANALYSIS
9.	Mubeen Fatima 2018-20	M.Phil.	PCR AMPLIFICATION OF matK AND rbcL PLANT DNA BARCODES FOR MOLECULAR IDENTIFACTION OF VEGETABLE PLANT SPECIES

Ph.D. Scholars enrolled:

1) Sumaia Saif (Plant Molecular Biology and Forensic) (PH.D MBFS11-F20)
2) Mubeen Fatima (Plant Molecular Biology and Forensic) (PH.D MBFS11-F20)

Administrative/Management Skills:

Served or serving as

- Member Quality Enhancement Cell Committee at CAMB, University of the Punjab.
- Incharge Library CAMB, University of the Punjab.
- IT Incharge CAMB, University of the Punjab.
- Member CAMB Sports/Events/Tours Coordination Committee.
- Member CAMB students Advisory Committee.
- Member CAMB Disciplinary Committee.
- Member CAMB Purchase Committee.