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RESEARCH INTEREST:

Development of Genetically modified organism:

Constructed genetically modified organisms and developed tools to development of transgenic plants, bacteria, and yeast. The plant transformation vectors developed were successfully utilized for development insect resistant plants including cotton, maize, rice, and tobacco. The therapeutic proteins including human Epidermal Growth Factor, Insulin like growth factor, interferon etc., have also been successfully cloned and expressed in bacterial and yeast expression system. Currently we are focusing on development of transgenic algae.

TEACHING EXPERIENCE:

- Teaching Molecular Biology courses to M.Phil Classes at CEMB.
- Supervised 16 M.Phil / Ph.D thesis research works of students as supervisor and/or co-supervisor.

PUBLICATIONS:

1. Khan, F., Wu, X., Matzkin, G. L., Khan, M. A., Sakai, F., & Vidal, J. E. (2016). Streptococcus pneumoniae Eradicates Preformed Staphylococcus aureus Biofilms through a Mechanism Requiring Physical Contact. *Frontiers in Cellular and Infection Microbiology*, DOI=10.3389/fcimb.2016.00104 (Impact Factor 5.2) (Impact Factor 1.42)
2. Bashir, H., **Ahmed, N***, Khan, M.A., Zafar, A.U., Tahir, S., Khan, F., Khan, M; Husnain, T. (2015). Simple procedure applying lactose induction and one step purification for high yield production of rhcIFN. *Biotechnology and Applied Biochemistry*. <http://dx.doi.org/10.1002/bab.1426>. (Impact Factor 1.42)

3. **Ahmed, N***, Bashir, H., Zafar, A. U., Khan, M. A., Tahir, S., Khan, F., & Husnain, T. (2015). Optimization of conditions for high-level expression and purification of human recombinant consensus interferon (rh-cIFN) and its characterization. *Biotechnology and Applied Biochemistry*. DOI:10.1002/bab.1320 (Impact Factor 1.687)
4. Ahmed, N., Zafar, A. U., **Khan, M. A.**, Tahir, S., Khan, M. I., Bashir, H., & Husnain, T. (2014). Matrix-assisted refolding and purification of placenta-derived recombinant human interleukin-6 produced in Escherichia coli. *Biotechnology and applied biochemistry*, *61*(5), 541-548. (Impact Factor 1.687)
5. **Khan, M. A.**, Khan, F., Ahmad, N., Khan, M. I., Zafar, A. U., & Husnain, T. (2014). Expression line approach to recombinant human epidermal growth factor into the yeast, *Pichia pastoris* from Huh-7 cell line. *Molecular biology reports*, *41*(3), 1445-1451. (Impact Factor 2.024)
6. **Khan, M. A.**, Hassan, N., Ahmad, N., Khan, M. I., Zafar, A. U., Khan, F., & Husnain, T. (2014). Studies to analyse the relationship between IFN α 2b gene dosage and its expression, using a *Pichia pastoris*-based expression system. *Yeast*, *31*(1), 13-28. (Impact Factor 1.742)
7. Farooq, A. M., Nasir, I. A., Tabassum, B., Tariq, M., Rahman, Z., Qamar, Z., **Khan, M. A.**, Ahmad, N., Haider, M. S., Javed, M. A. and Husnain, T Nasir, & Husnain, T. (2012). Development and comparative studies of double cross tomato hybrids. *African Journal of Agricultural Research*, *7*(37), 5259-5264 (Impact Factor 0.26)
8. Jamal, A., Nasir, I. A., Tabassum, B., Tariq, M., Farooq, A. M., Qamar, Z., **Khan, M. A.**, Ahmed N., Muhammad, S., Haider, M.S., Javed, M.A., & Husnain, T. (2012). Molecular characterization of capsid protein gene of potato virus X from Pakistan. *African Journal of Biotechnology*, *11*(74), 13854-13857. (Impact Factor 0.573)
9. Ahmed, N., **Khan, M. A.**, Shahid, N., Nasir, I. A., & Zafar, A. U. (2011). One step purification of biological active human interleukin-2 protein produced in yeast (*Pichia Pastoris*). *African Journal of Biotechnology*, *10*(67), 15170-15178. (Impact Factor 0.573)
10. **Khan, M. A.**, Ahmad, N., Zafar, A. U., Nasir, I. A., & Qadir, M. A. (2011). Isolation and screening of alkaline protease producing bacteria and physio-chemical characterization of the enzyme. *African Journal of Biotechnology*, *10*(33), 6203-6212.(Impact Factor 0.573)
11. Sabar, M. F., Yaqub, M., **Khan, M. A.**, Ahmad, N., Ghani, M. U., & Shahid, M. (2010). Synthesis of a new tri-branched PEG-IFN α 2 and its impact on anti viral bioactivity. *International Journal of Peptide Research and Therapeutics*, *16*(4), 239-245. (Impact Factor 0.905)
12. Rafiq, M., Fatima, T., Husnain, T., Bashir, K., **Khan, M. A.**, & Riazuddin, S. (2006). Regeneration and transformation of an elite inbred line of maize (*Zea mays* L.), with a gene from *Bacillus thuringiensis*. *South African Journal of Botany*, *72*(3), 460-466. (Impact Factor 0.978)
13. **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 J Biol Sci*, *4*, 1518-1522 .