

Dr Muhammad Badaruddin

Assistant Professor

Department of Food Engineering

N.E.D. University of Engineering & Technology

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Educational Qualifications

PhD (Biosciences) University of Exeter, Exeter, United Kingdom

Oct 2007- Jan 2012

Thesis Title: Investigating the role of glycogen metabolism in the rice blast fungus *Magnaporthe oryzae*

Techniques Acquired: Polymerase Chain Reaction (PCR), quantitative Real Time PCR (qRT-PCR), Conventional Cloning, Gap Repair Cloning, Cell culture, Southern Blotting & Hybridization, Northern Blotting & Hybridization, Electrophoresis for DNA, RNA & Proteins, Fungal, Yeast & Bacterial Transformations, Quantitative Live Cell Imaging, Confocal Microscopy, Enzyme activity assays and gained knowledge of protein purification techniques, HPLC and LC- MS.

MSc (Food Science & Technology) University of Karachi, Karachi, Pakistan

Jan 2003 – Dec 2003

Thesis Title: Preservation of Green Chilli (*Capsicum annum*) paste.

BSc (Hons) (Food Science & Technology) University of Karachi, Karachi, Pakistan

Jan 2000 – Dec 2002

Professional Experiences

Assistant Professor Department of Food Engineering NED University of Engineering & Technology, Karachi. November 2013 – to date

Assistant Professor Department of Biochemistry, Dow International Medical College, Dow University of Health Sciences, Karachi. Jan 2013 – June 2013

Junior Research Fellow HEJ Research Institute of Chemistry, University of Karachi, Karachi. May. 2004 – Sept 2007

Production Officer Quick Food Industries (Pvt) Limited (Mon Salwa), S.I.T.E, Karachi. Dec 2003 – May 2004

Conferences & Symposia Attended:

- Poster presented in “9th International Mycological Congress: The Biology of Fungi” held in Edinburgh, UK from 1st – 6th August 2010
- Oral presentation on “Role of Glycogen metabolism in Rice blast disease” at annual MPBB meeting held in Oxford on 21st September 2009
- Attended “BSPP Presidential meeting 2009: Darwin to Disease – crops and their pathogens” held in Oxford, UK on 22nd September 2009
- Poster presented in “22nd New Phytologist Symposium: Effectors in plant-microbe Interactions” held in Versailles, France from 13th – 16th September 2009
- Organizing team member in “10th International Symposium in Natural product chemistry” held in Karachi, Pakistan from 6th – 9th January 2006.

Publications

- Rita Galhano, Adriana Illana, Lauren S. Ryder, Julio Rodri'guez-Romero, Marie Demuez, **Muhammad Badaruddin**, Ana Lilia Martinez-Rocha, Darren M. Soanes, David J. Studholme, Nicholas J. Talbot, Ane Sesma. 2017. Tpc1 is an important Zn(II)2Cys6 transcriptional regulator required for polarized growth and virulence in the rice blast fungus. *PLoS Pathog* 13(7): e1006516. <https://doi.org/10.1371/journal.ppat.1006516>
- Shagufta Ishtiaque, Shahina Naz, Rahmanullah Siddiqi, Syed Umer Abdullah, Kehkashan Khan, Jawaad Ahmed & **Muhammad Badaruddin**. 2014. Antioxidant Activities and Total Phenolics Contents from Extracts of *Terminalia catappa*, *Carrisa carandas*, and *Opuntia ficus indica* Fruits. *Recent Innov. Chem. Engg.* 7: 106-112.
- **Muhammad Badaruddin**, Lucy J. Holcombe, Richard A. Wilson, Zheng-Yi Wang, Michael J. Kershaw, Nicholas J. Talbot. 2013 Glycogen metabolic genes are involved in trehalose-6-phosphate synthase-mediated regulation of pathogenicity by the rice blast fungus *Magnaporthe oryzae*. *PLoS Pathog* 9(10): e1003604. doi:10.1371/journal.ppat.1003604
- Syed Umer Abdullah, **Muhammad Badaruddin**, Rashida Ali, Mian Nadeem Riaz. 2010. Effect of elementary and advanced glycation products of nisin on its preservative efficacy and digestibility. *Food Chemistry*. 122: 1043-1046
- Syed Umer Abdullah, **Muhammad Badaruddin**, Syed Asad Sayeed, Rashida Ali, Mian Nadeem Riaz. 2008. Binding Ability of Allura Red with food proteins and its impact on protein digestibility. *Food Chemistry*. 110: 605-610
- **Muhammad Badaruddin**, Syed Umer Abdullah, Syed Asad Sayeed, Rashida Ali, Mian Nadeem Riaz. 2007. Sunset Yellow: A food color for protein staining with SDS- PAGE. *Cereal Foods World*. 52(1): 12-14
- Bushra Jabeen, **Muhammad Badaruddin**, Rashida Ali, Darakshan J. Haleem, 2007. Attenuation of restrained-induced behavioral deficits and serotonergic responses by stabilized rice bran in rats. *Nutritional Neuroscience*. 10: 11-16

Other Professional Assignments

- **Member**, Board of Studies, Department of Food Engineering, N.E.D. University of Engineering & Technology, Karachi
- **Member**, Board of Studies, Department of Food Science & Technology, Jinnah University for Women, Karachi
- **Area Coordinator**, ISO 9001:2015, Department of Food Engineering, NEDUET
- **Member**, Outcome Based Education (OBE) design team for Department of Food Engineering, NEDUET.

Software Knowledge

Microsoft Word, PowerPoint and Excel

Adobe Photoshop and Illustrator

Online genomics and proteomics tools