

CURRICULUM VITAE

Mahboob Ul Hussain, PhD

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Born: Nov. 01, 1974
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BRIEF PROFILE

- Job: Professor (26th January 2019 onwards) Associate Professor (25th January 2016 to 25th January 2019); Selection grade (Sept. 2014 to Feb. 2016); Senior Assistant Professor (Sept-2009 to Sept-2014), Department of Biotechnology, University of Kashmir.
Assistant Professor (Sept-2005-Sept-2009), Department of Biotechnology, University of Kashmir.
- Major responsibility: Post-graduate teaching and research.
- Teaching: Molecular biology, Genetic engineering and intermediary metabolism.
- Research: Translational regulation of proteins by microRNAs and Internal Ribosome entry Sites (IRES) and their status during cancer and hypoxia.

ACADEMIC & RESEARCH

- Post Doctoral Fellow (March 2005- March -2006): Department of Neuroanatomy and Molecular Brain Research, Ruhr University Bochum, Germany.
- PhD (Molecular Neuroscience) with "Summa Cum laude" Outstanding / Excellent. (August 2002- March 2005): International Graduate School of Neuroscience, Ruhr University, Bochum, Germany
- MSc (Biochemistry) (Dec. 1996- March 1999): Department of Biochemistry, University of Kashmir, India

AWARDS & HONOURS

- SERC FAST TRACK Young Scientist, DST, NEW Delhi (2009)
- Received European "Highest" honor in PhD (Summa cum laude) (2005)
- International Graduate Fellowship (IGSN) (2002): International Graduate School of Neuroscience, Ruhr University, Bochum, Germany
- National Entrance test for Research Fellowship (1999): Council of Scientific & Industrial Research (CSIR), India.

- Eligibility test for the Appointment of Lecturers (SLET) (2000): Jammu and Kashmir State

PUBLICATIONS

Research articles:

- Bhat MY, Mir IA, **Ul Hussain M**, Singh LR, Dar TA. Urea ameliorates trimethylamine N-oxide-Induced aggregation of intrinsically disordered α -casein protein: the other side of the urea-methylamine counteraction. *J Biomol Struct Dyn.* 2023 May;41(8):3659-3666. doi: 10.1080/07391102.2022.2053744.
- Mehraj U, Mir IA, **Hussain MU**, Alkhanani M, Wani NA, Mir MA. Adapalene and Doxorubicin Synergistically Promote Apoptosis of TNBC Cells by Hyperactivation of the ERK1/2 Pathway Through ROS Induction. *Front Oncol.* 2022 Jul 6;12:938052. doi: 10.3389/fonc.2022.938052
- Niaz S, **Hussain MU**. Role of GW182 protein in the cell. *Int J Biochem Cell Biol.* 2018 Aug;101:29-38. doi: 10.1016.
- Madiha Niyaz, Mosin S. Khan, **Mahboob Ul Hussain**, Rauf A. Wani, Omar J. Shah, Syed Mudassar. Expression Undercurrents of Sonic Hedgehog in Colorectal and Pancreatic T Cancers. *Gene Reports* 2018, 12: 310-316
- Lone SN, Maqbool R, Parray FQ, **Ul Hussain M**. Triose-phosphate isomerase is a novel target of miR-22 and miR-28, with implications in tumorigenesis. *J Cell Physiol.* 2018 Jun 1. doi: 10.1002/jcp.26821
- Ahmad Waza A, Ahmad Bhat S, **Ul Hussain M**. Ganai BA. Connexin 43 and ATP-sensitive potassium channels crosstalk: a missing link in hypoxia/ischemia stress. *Cell Tissue Res.* 2018 Feb;371(2):213-222. doi: 10.1007/s00441-017-2736-3
- Ismail R, **Ul Hussain M**. The up regulation of phosphofructokinase1 (PFK1) protein during chemically induced hypoxia is mediated by the hypoxia-responsive internal ribosome entry site (IRES) element, present in its 5'untranslated region. *Biochimie.* 2017 Aug;139:38-45. doi: 10.1016/j.biochi.2017.05.012.
- Bhat GA, Maqbool R, Dar AA, **Ul Hussain M**, Murugavel R. Selective formation of discrete versus polymeric copper organophosphates: DNA cleavage and cytotoxic activity. *Dalton Trans.* 2017 Sep 26. doi: 10.1039/c7dt02763j.
- Malik SA, Khan MS, Dar M, **Hussain MU**, Shah MA, Shafi SM, Mudassar S. Molecular Alterations and Expression Dynamics of LATS1 and LATS2 Genes in Non-Small-Cell Lung Carcinoma. *Pathol Oncol Res.* 2017 Apr 22. doi: 10.1007/s12253-017-0225-3.
- Malik SA, Khan MS, Dar M, **Hussain MU**, Mudassar S. TAZ is an independent prognostic factor in non-small cell lung carcinoma: Elucidation at protein level. *Cancer Biomark.* 2017;18(4):389-395. doi: 10.3233.

- Maqbool R, Lone SN, **Ul Hussain M**. Post-transcriptional regulation of the tumor suppressor p53 by a novel miR-27a, with implications during hypoxia and tumorigenesis. *Biochemical journal*. 2016 Oct 15;473(20):3597-3610
- Maqbool R, Rashid R, Ismail R, Niaz S, Chowdri NA, **Hussain MU**. The carboxy-terminal domain of connexin 43 (CT-Cx43) modulates the expression of p53 by altering miR-125b expression in low-grade human breast cancers. *Cell Oncol (Dordr)*. 2015 Dec;38(6):443-51. doi: 10.1007/s13402-015-0240.
- **Hussain MU**, Olk S, Schoenebeck B, Wasielewski B, Meier C, Prochnow N, May C, Galozzi S, Marcus K, Zoidl G, Dermietzel R. Internal Ribosomal Entry Site (IRES) Activity Generates Endogenous Carboxy-terminal Domains of Cx43 and is Responsive to Hypoxic Conditions. *JBC* 2014 Jul 25;289(30):20979-90
- Khan MS, Pandith AA, Masoodi SR, Wani KA, **Ul Hussain M**, Mudassar S. Epigenetic silencing of TSHR gene in thyroid cancer patients in relation to their BRAF V600E mutation status *Endocrine*. Nov;47(2):449-55
- Ismail R, Rashid R, Andrabi K, Parray FQ, Besina S, Shah MA, **Hussain MU**. Pathological Implications of Cx43 Down-regulation in Human Colon Cancer. *Asian Pac J Cancer Prev*. 2014;15(7):2987-91.
- Waza AA, Andrabi K, **Hussain MU**. Protein kinase C (PKC) mediated interaction between connexin43 (Cx43) and K₊(ATP) channel subunit (Kir6.1) in cardiomyocyte mitochondria: Implications in cytoprotection against hypoxia induced cell apoptosis. *Cell Signal*. 2014 Sep;26(9):1909-17
- Maqbool R, **Hussain MU**. MicroRNAs and human diseases: diagnostic and therapeutic potential. *Cell Tissue Res* 2014 Oct;358(1):1-15
- Khan MS, Pandith AA, Azad N, **Hussain MU**, Masoodi SR, Wani KA, Andrabi KI, Mudassar S. Impact of molecular alterations of BRAF in the pathogenesis of thyroid cancer. *Mutagenesis*. 2014 Mar;29(2):131-7.
- Raihana Maqbool, Rehana Ismail and **Hussain MU**. Mutations in MicroRNA Genes and Their Binding Sites are Infrequently Associated with Human Colorectal Cancer in the Kashmiri Population. *MicroRNA* 2013, 2, 219-224.
- Beigh MA, Showkat M, Bashir B, Bashir A, **Hussain MU**, Andrabi KI. Growth inhibition by bupivacaine is associated with inactivation of ribosomal protein S6 kinase 1. *Biomed Res Int* 2014;2014:831845.
- M.A. Beigh, M. Showkat, **Hussain MU** and K.I. Andrabi. Loss of hydrophobic motif and activation loop phosphorylation is a consequence and not the mechanism of s6 kinase 1 inhibition by rapamycin. *Journal of Biological Regulators & Homeostatic Agents*. (2013) 27 (2)
- Khan MS, Pandith AA, **Hussain MU**, Iqbal M, Khan NP, Wani KA, Masoodi SR, Mudassar S. Lack of mutational events of RAS genes in sporadic thyroid cancer but high risk associated with HRAS T81C single nucleotide polymorphism (case-control study). *Tumour Biol*. 2013 Feb;34(1):521-9.

- Khan NP, Pandith AA, Yousuf A, Khan NS, Khan MS, Bhat IA, Nazir ZW, Wani KA, **Hussain MU**, Mudassar S. The XRCC1 Arg399Gln gene polymorphism and risk of colorectal cancer: a study in Kashmir. *Asian Pac J Cancer Prev.* 2013;14(11):6779-82.
- Aejaaz Waza, Khurshid Andrabi and **Hussain MU**. Adenosine-triphosphate-sensitive K⁺-channel (Kir6.1): A novel phosphospecific interaction partner of connexin 43 (Cx43). *Exp Cell Res.* 2012 Dec 10;318(20):2559-66.
- **Ul-Hussain M**, Dermietzel R, Zoidl G. Connexins and Cap-independent translation: Role of internal ribosome entry sites. *Brain Res.* 2012 Jul 6.
- Qureshi MA, Jan N, Dar NA, **Hussain MU**, Andrabi KI. A novel p16INK4(A) mutation associated with esophageal squamous cell carcinoma in a high risk population. *Biomarkers.* 2012 Jun 22.
- **Hussain MU**. Micro-RNAs (miRNAs): genomic organisation, biogenesis and mode of action. *Cell Tissue Res* (2012) Aug;349(2):405-13.
- Beigh MA, Showkat M, **Ul Hussain M**, Latoo SA, Majeed ST, Andrabi KI. Rapamycin inhibition of baculovirus recombinant (BvR) ribosomal protein S6 kinase (S6K1) is mediated by an event other than phosphorylation. *Cell Commun Signal.* 2012 Mar 1;10:4.
- Ayub SG, Ayub T, Khan SN, Rasool S, **Hussain MU**, Wani KA, Kuchay S, Lone MM, Andrabi KI. Epidemiological distribution and incidence of different cancers in Kashmir valley--2002-2006. *Asian Pac J Cancer Prev.* (2011)12(7):1867-72.
- Nighat P. Khan, Arshad A. Pandith, **Hussain MU**, AdfarYousuf, Mosin S. Khan, Mushtaq A. Siddiqi, Khrusheed A. Wani and Syed Mudassar. Loss of heterozygosity (LOH) of deleted in colorectal cancer (DCC) gene and predisposition to colorectal cancer: Significant association in colorectal cancer patients of Kashmir. *Journal of Cancer Research and Experimental Oncology* (2011), 3(8): 88-94
- Khan NP, Pandith AA, **Hussain MU**, Yousuf A, Khan MS, Wani KA, Mudassar S. Novelty of Axin 2 and lack of Axin 1 gene mutation in colorectal cancer: a study in Kashmiri population. *Mol Cell Biochem.* (2011) 355(1-2):149-55.
- Parveen N, **Hussain MU**, Pandith AA, Mudassar S. Diversity of axin in signaling pathways and its relation to colorectal cancer. *Med Oncol.* (2011) 28
- Peerzada K, **Hussain MU**, Nishawar Jan, Verma V, Qazi GN and Andrabi KI. Functional cloning and predictive structural modeling of a novel esterase RRL 1789. *J. Gen. Appl. Microbil.*, (2009), 55: 317-321 (1st authorship shared)
- Nishawar jan, **Hussain MU**, Khurshid Andrabi. Cold resistance in plants: A mystery unresolved. *Electronic journal of biotechnology* (2009), 12 (3)

- **Hussain MU**, Rolf Dermietzel and Georg Zoidl. Characterization of the internal IRES element of the zebrafish connexin55.5 reveals functional implication of the polypyrimidine tract binding protein. *BMC Molecular Biology* 2008, 9:92
- **Hussain MU**, Georg Zoidl, Jan Klooster, Maarten Kamermans and Rolf Dermietzel. IRES-mediated translation of the carboxy-terminal domain of the horizontal cell specific connexin Cx55.5 in vivo and in vitro. *BMC Molecular Biology* 2008, 9:52
- Nishawar Jan, **Hussain MU**, Khurshid Andrabi. Programmed cell death or apoptosis: Do animals and plants share anything in common. *Biotechnology and Molecular Biology Reviews* (2008), 3(5): 111-126.
- **Mahboob Ul Hussain**, Kremer M, Zoidl G, Dermietzel R. Transcriptional and translational regulation of zebrafish connexin 55.5 (zf.Cx.55.5) and connexin 52.6 (zf.Cx52.6). *Cell Commun Adhes.* 2003 Jul-Dec;10(4-6):227-31.
- Shields CR, Klooster J, Claassen Y, **Mahboob Ul Hussain**, Zoidl G, Dermietzel R, Kamermans M. Retinal Horizontal Cell-Specific Promoter Activity and Protein Expression of Zebrafish Connexin 52.6 and Connexin 55.5 *J Comp Neurol.* 2007 Apr 10;501(5):765-79
- Vikas Handa, **Mahboob-Ul-Hussain**, Nirupma Pati, and Uttam Pati. Multiple Liver-Specific Factors Bind to a 64-bp Element and Activate Apo(a) Gene. *Biochemical and Biophysical Research Communications* 292, 243–249 (2002)

Books

- Connexins: The Gap Junction Proteins. Author: Mahboob Ul Hussain (2014). Publisher: Springer. ISBN: 978-81-322-1918-7
- DNA Recombinant Technology & Molecular Techniques. Author: Mahboob Ul Hussain. Publisher: Black Prints, New Delhi (2013). ISBN: 978-93-82036-73-9
- Biotechnology Laboratory Manual: Authors: Ajaz A Waza and Mahboob Ul Hussain (2014). Publisher: Black Prints, New Delhi. ISBN: 978-93-82036-29-6
- Zebrafish retinal connexins, zfCx55.5 and zfCx52.6. Expression & regulation. Mahboob Ul Hussain (2012) Lambert academic publishing. (978-3-8465-8996-0)

CONFERENCES/WORKSHOPS

- Invited and attended the DAAD Alumni Spring School on Mechanisms of Cognition, Learning and Memory, International School of Neuroscience, Bochum, Germany (2011)

- Delivered a talk on “Transcriptional and translational regulation of Connexin genes” at International Gap Junction Conference, St John’s College, University of Cambridge, Cambridge, UK. (2003)
- Presented poster at Retinal Connexin Meeting, Research and Retinal Signal Processing, The Netherlands Ophthalmic Research Institute, Amsterdam, The Netherlands (2004)
- Presented Poster at Ruhr University, Ruhr University Bochum, Germany (2004)
- Organized and presented poster at International Symposium on Genomic Instability and Cancer, University of Kashmir (2007)
- 2nd J&K Science Congress, University of Kashmir (2006)
- 3rd J&K Science Congress, University of Kashmir (2010)
- Attended a two day workshop on “Real time PCR” organized by Invitrogen Bioservices, India, Gurgaon Haryana India (2011)

PROJECTS

Completed

- ***Project Title:*** Expression Dynamics of carboxy-terminal domain of connexin 43 (Cx43) under ischemic stress and its role in ischemia preconditioning
Funding agency: Department of Science and Technology (DST), New Delhi
Year & Cost: 2009/15,73,200 (INR)
- ***Project Title:*** Internal ribosome Entry site (IRES) mediated expression of endogenously produced carboxy-terminal domain of connexin 43 (CT-Cx43): Status of expression in the breast cancer
Funding agency: Department of Biotechnology (DBT), New Delhi
Year/cost: 2010/27,30,000 (INR)
- ***Project Title:*** Increased glycolytic capacity of Astrocytes during hypoxia: Role of the cap-independent Translational of glycolytic enzymes
Funding agency: Department of Biotechnology (DBT), New Delhi
Year/Cost: 2011 /46,29,000 (INR)
- ***Project Title:*** Expressions dynamics of TP53 and its isoforms during hypoxia: Role of hypoxia-regulated microRNAs (miRNAs).
Funding Agency: Department of Science and Technology (DST), New Delhi
Year/Cost: 2014 /47,90,000 (INR)
- ***Project Title:*** Up-regulation of pyruvate Kinase M2 in human colorectal cancer: Role of post-transcriptional regulatory elements.
Funding agency: Department of Biotechnology (DBT), New Delhi

Year/Cost: 2015/24,78,000 (INR)

On-Going/Sanctioned

- **Project Title:** To understand the signal transduction pathway involving the role of adenosine-triphosphate-sensitive K⁺ channel (kir6.1) and Cx43.
Funding agency: CSIR, New Delhi.
Year/Cost: 2015/24,60,000 (INR)