Curriculum vitae

AMENA MAHMOOD

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CURRENT POSITION

- Guest Lecturer*- Biochemistry, DDU-Kaushal Kendra, Jamia Millia Islamia, New Delhi.
- **Subjects taught**: Basic Biochemistry, Cell biology and Medical Genetics, Clinical Biochemistry, Neurological Disorders and Haematology

** Sharing workload equivalent to Assistant Professor (Contractual)*

WORK EXPERIENCE

S. No.	Particulars of the Post	Period of Service			Roles and Responsibilities	Name and Address of theEmployer
		From	To	Total Period		
01	GUEST FACULTY*	18-07-2022	Ongoing	02 Years	Teaching UG, PREPARING Q PAPERS, VIVA VOCE, Conducting practicals. Papers: Basic Biochemistry, Cell Biology & Medical Genetics, Clinical Biochemistry, Neurological Disorders, Neuromuscular Disorders	DDU- KAUSHAL KENDRA, JMI
02	ASSISTANT PROFESSOR (CONTRACTUAL)	01-03-2021	30-06-2022	01 Yr, 4 Months		
03	POST DOCTORAL FELLOW	16-07-2018	28-02-2021	2 YR, 7 Months	Research work on REDOX signalling	School of Life Sciences, Jawaharlal Nehru University (Prof Shyamal K Goswami)
04	Research Associate	01-03-2018	13-07-2018	4 months	Development of Cellulose based nanoparticles	INMAS, DRDO (Dr. Amit K Tyagi)

ACADEMIC QUALIFICATIONS

Course/	School/College/	Year	Subjects
PhD	Jamia Hamdard,	2017	Biochemistry
M.Sc.	Jamia Milia Islamia,	2010	Biochemistry
B.Sc. Life Sciences	Gargi college, Delhi University	2008	Biology and Chemistry

AWARDS/ FELLOWSHIPS

- UGC- Dr. D.S Kothari Post- Doctoral Fellowship, July 2018 - February 2021.
- DRDO-RA- March 2018 - June 2018
- UGC-NET-LS Life Sciences 2010
- UGC- Research Fellowship in Science for Meritorious students April 2011-March 2016

RESEARCH EXPERIENCE

Post-Doctoral Research: Working on cardiac redox signalling pathways, Since July 2018
Supervisor: Prof. S.K Goswami at School of Life Sciences, JNU, New Delhi.
Work highlights: Adrenergic signalling was assessed in H9C2 rat cardiac myoblasts with various agonists and antagonists. We managed to see that a combination of agonists and antagonist work to reduce redox stress much better than antagonist alone. Further, superoxide generated in mitochondria attempted to be attenuated via Mito-targeted compound -Mitoapocynin. This compound though studied in Alzhiemer's, seemed to be ineffective in controlling redox stress in other non-neuronal cell lines. Works published.

PhD thesis: Cell proliferation: modulation and implications in tissue repair by natural substances.
Supervisor: Prof Shakir Ali, Department of Biochemistry, School of Chemical and Life Sciences, Jamia Hamdard, New Delhi-62.
Work highlights: Six years of doctoral work on

- Selected natural compounds were used to study their cell proliferative potential *IN VITRO* in secondary cultures like WRL68, HepG2, SH SY5Y, Raw264.7 and MCF 7 cell lines.
- Further the proliferative potential was validated on internal and external injury models of Wistar rats by developing Liver Fibrosis surgically via Bile duct ligation and excision wound respectively. Studies were carried out to consider therapeutic intervention for tissue repair in these *IN VIVO* injury models.
- We also developed an herbal topical ointment to accelerate the excision tissue repair process *IN VIVO*. A mechanistic approach to wound healing, identifying the various inflammatory and pro inflammatory cytokines responsible during initial healing phase followed by study of proliferative phase markers PCNA, VEGF, Collagen etc).
- Our natural substances have been concluded efficient in tissue repair and possibly regeneration.

TECHNIQUES KNOWN

- **Animal handling:** Well versed with Wistar rats, Balb c mice , C57BL/6

Animal surgery (https://www.youtube.com/watch?v=xvOLeAfzof4&t=62s) and maintenance of animals post-surgery (Bile duct ligation), Intraperitoneal, intramuscular& subcutaneous injections, Tissue processing for histopathology and Animal dissection.

- **Cell culture and microscopy**

Handling, culturing, maintaining and processing mammalian cell line (MCF7, Hep G2, Neuro2A, SHSY5Y, H9c2, NIH3T3, HEK293 etc)
Primary culture: Isolation of peritoneal macrophage, cardiomyocytes form murine model
and maintenance of cell line
Flow cytometry
Immunocytochemistry
Confocal microscopy, fixed and live cell imaging

- **Proteomics and Biochemistry**

Immunohistochemistry, Western blotting, Gelatin Zymography, Agarose gel electrophoresis etc

- **Proliferation and Apoptosis assays:**

MTT assay, CSFE cell proliferation Assay, Propidium Iodide staining activity,
Immunofluorescence, Solution assay.

- **Other techniques**

HPLC, Thin Layer Chromatography, Microbial culture etc

TRAINING/PROJECTS

- RT-PCR hand on training cum workshop organised by DDU-KK, JMI on 12th January 2023
- Basic course on Digital flow cytometry (BD LSR II) conducted by BD Biosciences, India from 4th to 6th April 2016.
- Worked as a Project Fellow on a UGC-Major Research Project at Department of Biochemistry, Jamia Hamdard, New Delhi from September 2010 to August 2012, entitled "Studies on the wound healing properties of some plants rich in triterpenoid saponins."
- Assisted in UGC-Special Assistance Programme sponsored project on "Role of boron and selected compounds in diabetes mellitus and liver cirrhosis." From April 2011-March 2016 at Department of Biochemistry, Jamia Hamdard.
- Dissertation training at School of Life Sciences, Jawahar Lal Nehru University (JNU), New Delhi from May 2009 to August 2009.Worked on "Screening of peptides for their antifungal activity on human pathogen Candida species" under supervision of Dr. Rajendra Prasad

PUBLICATIONS

Book chapters – 03 Nos

1. MBCE-013, Human Physiology,Vol I, Unit I, IGNOU Content preparation. ISBN: 9789361064456.
2. Etiology of cancer, **Mahmood, A.,** Srivastava, R. Understanding Cancer, 1st Edition, From Basics to Therapeutics, Editors: Buddhi Jain Shweta Pandey, ISBN: 9780323998833, Imprint: Academic Press, Published Date: 1st January 2022. https://www.elsevier.com/books/understanding-cancer/jain/978-0-323-99883-3
3. Medical diagnosis of cancer, **Mahmood, A.,** Srivastava, R. Understanding Cancer, 1st Edition, From Basics to Therapeutics, Editors: Buddhi Jain Shweta Pandey, ISBN: 9780323998833, Imprint: Academic Press, Published Date: 1st January 2022. https://www.elsevier.com/books/understanding-cancer/jain/978-0-323-99883-3https://www.elsevier.com/books/understanding-cancer/jain/978-0-323-99883-3

List of Publications- 13 Nos

1. Prasad, A., **Mahmood, A***., Gupta, R., Bisoyi, P., Saleem, N., Naga, Prasad, SV., Goswami, SK. (2021) In cardiac muscle cells, both adrenergic agonists and antagonists induce reactive oxygen species from NOX2 but mutually attenuate each other's effects. European Journal of Pharmacology. Oct 5; 908:174350 PMID: 34265295. (*Equal Contribution) **IF: 4.43,** UGC Care List II
2. **Mahmood, A**., Bisoyi. P., Banerjee, R., Yousuf, M., Goswami, S.K. (2021) Mitoapocynin, a mitochondria targeted derivative of apocynin induces mitochondrial ROS generation and apoptosis in multiple cell types including cardiac myoblasts: A potential constraint to its therapeutic use. Molecular and cellular Biochemistry. May;476(5):2047-2059. doi: 10.1007/s11010-020-04039-4. PMID: 33515200. **IF: 3.39,** UGC Care List II

3. Shinkafi, T.S., Kaushik, A., **Mahmood**, **A**., Tiwari, A.K., Alam, M.M., Akhtar, M., Gupta,D., Ali,S.(2020) Computational prediction and experimental validation of the activator function of 2C-β-d- glucopyranosyl-1,3,6,7-tetrahydroxyxanthone on pancreatic and hepatic hexokinase. Journal of Biomolecular Structure and Dynamics, DOI: 10.1080/07391102.2019.1650829, 2020 Jul;38(10):2976-2987. **IF: 3.54,** UGC Care List II
4. **Mahmood, A**., Tiwari, A.K., Şahin, K., Kucuk, U, Ali, S. (2016) Triterpenoid saponin-rich fraction of Centella asiatica decreases IL-1β and NF-κB, and augments tissue regeneration and excision wound repair. Turkish Journal of Biology 40: 399- 409 **IF: 1.045**, ISSN: 1300-0152, UGC: 35200, UGC Care List II
5. Ali, S., Prasad, R., **Mahmood, A**., Routray, I., Shinkafi, T.S., Sahin, K., Kucuk, O. (2014) Eugenol-rich fraction of Syzygium aromaticum (Clove) reverses biochemical and histopathological changes in liver cirrhosis and inhibits hepatic cell proliferation. Journal of Cancer Prevention 19 (4):288-300. ISSN: 22883657, UGC Care List II
6. Rubab, I., Routray, I., **Mahmood, A**., Bashir, S., Shinkafi, T.S., Khan, F., Ali, S. (2013) Mineral pitch stimulates humoral, cellular and innate immune responses in mice. Pharmaceutical Biology 51(8): 997–1007. (DOI:10.3109/13880209.2013.774027**). IF 2.971**, ISSN: 1388-0209, UGC Care List II
7. Farooqui, H., **Mahmood, A**., Jairajpuri, D. S., Ahmad, F., and Ali, S. (2011) Boron increases the transition temperature and enhances thermal stability of heme proteins. Journal of Thermal Analysis and Calorimetry. 104:339-342 **. IF 2.471**, 1388-6150, UGC Care List II
8. Ali, S., Prasad, R., Naime, M., Zafar, H., **Mahmood, A**., Routray, Yalniz, M., Bahcecioglu, I.H., and Sahin, K. (2011) Dried peel fraction of Citrus sinensis partially reverses pathological changes in rat model of liver cirrhosis. Mediterranean Journal of Nutrition and Metabolism. 4 (1): 57-67 , 1973-798X, UGC Care List II
9. **Mahmood, A**., Ali, S. (2017) Microbial and Viral Contamination of Animal and Stem Cell Cultures: Common Contaminants, Detection and Elimination. Journal of Stem Cell Research and Therapeutics 2(5): 00078. ISSN 2157-7633 .
10. Ahmad, T., Shinkafi, T.S., Routray, I., **Mahmood, A**., Ali, S. (2012) Aqueous extract of dried flower buds of Syzygium aromaticum inhibits Inflammation and oxidative Stress. Journal of Basic and Clinical Pharmacy 3 (3): 323-7, ISSN: 0976-0113
11. **Mahmood, A**., Routray, I., Ali, S. (2011) Hydro-alcoholic extract of Centella asiatica augments the process of wound healing in animal model. Intl. J. Trends Med. 1:23-26. ISSN 1799-540X (Print)ISSN 1799-5418 (Online)
12. Naime, M., Ahmad, T., Routraya, I., Mahmood, A., Ali, S., Pahwa, S., Toteja, G.S. (2011) A Rapid Microprocedure for the Determination of Retinol in Human Serum: Method Validation and Detection of the Limit of Quantification. Intl. J. Trends Med. 1:23-26
13. Prasad R, Naime M, Routray I, Mahmood A, Khan F, Ali S. (2010) Valeriana jatamansi partially reverses liver cirrhosis and tissue hyperproliferative response in rat. Methods and findings in experimental and clinical pharmacology. 32(10): 713-719, ISSN: 0379-0355

CONFERENCES/SEMINARS AND WORKSHOPS ATTENDED

- Best paper presentation award at Cardiovascular Research Convergence, 4th August 2019, AIIMS, New Delhi
- Poster Presentation at International Symposium on Cancer Prevention and Treatment , Feb 9-18, 2018 "Eugenol Rich Fraction of Clove Inhibits the Progression o Chronic Liver Injury to Liver Cancer, Pg 58"
- Oral presentation at UGC SAP conference at Jamia Millia Islamia 13th-15th February 2017.
- Oral presentation at UGC SAP conference at Jamia Millia Islamia 23-29th September 2014.
- Volunteered in organizing UGC SAP sponsored National Conference on Chronic Inflammatory Disorders, organized by Jamia Hamdard, New Delhi from 13-15th February 2014.
- Participated in a workshop on Applications of Bioinformatics in Modern Molecular Biology held at International Centre for Genetic Engineering and Biotechnology, New Delhi from 21-25th October '2013.
- Participated in UGC-SAP organized workshop on GCMS, FLASH CHROMATOGRAPHY AND HPTLC, Organized by Department of Pharmacognosy, Jamia Hamdard in 2012.
- Participated in Manuscript writing workshop organized at Jamia Hamdard in 2011.
- Interdisciplinary Science Conference - 2009 on recent trends in research in biological science, Department of bioscience, Jamia Millia Islamia.