
NISSAR UL ASHRAF, PhD

ASSISTANT PROFESSOR

Department of Biochemistry

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Teacher, Researcher, working to become leader and grow leaders in the scientific field, and make world a better place.

EDUCATION:

Ph.D in Sciences, Academy of scientific and Innovative Research (AcSIR-CSIR-IIIM), India

M.Sc. Biochemistry, University of Kashmir, Srinagar, India-190006

B.Sc. with Chemistry and Biology, University of Kashmir, Srinagar, India-190006

ACADEMIC AND RESEARCH APPOINTMENTS:

- 2019-Current Assistant Professor, Department of Biochemistry, **Higher Education Department, Govt. of J&K, India**
- 2017-2019: **DST-SERB** National Postdoctoral Fellow, Chromatin and Epigenetics Biology Lab, Department of Biotechnology, **University of Kashmir, Srinagar, Hazratbal-190006, India**
- 2016-2017 **CIHR** - Postdoctoral Fellow, Molecular and Cell Biology of Lipids, 315 Heritage Medical Research Centre, **University of Alberta, 11207-87 Ave, Edmonton, AB, Canada, T6G2S2**
- 2012- 2016 **CSIR** - Senior Research Fellow (**SRF**) at PK-PD (Pharmacokinetics and Pharmacodynamics) Toxicology Division, **CSIR-Indian Institute of Integrative Medicine, Jammu, India-180001**
- 2010- 2012 **CSIR** - Junior Research Fellow (**JRF**) at PK-PD Toxicology Division, **CSIR-Indian Institute of Integrative Medicine, Jammu, India-180001**
- 2008-2010 Project Assistant Level II at PK-PD Toxicology Division, **CSIR-Indian Institute of Integrative Medicine, Jammu, India-180001**

RESEARCH AREAS

➤ **Molecular and Cell Biology of Non-alcoholic fatty liver Disease (NAFLD).**

Brief Description: Non alcoholic fatty liver disease (NAFLD) is one of the most common causes of liver dysfunction worldwide. The prevalence of NAFLD (as per data from 2020) is increasing at the same rate as that of obesity and showing a uniform trend across the globe with an estimated global prevalence of 25%, with highest rates reported from South America (31%) and the Middle East (32%), followed by Asia (27%), USA (23%) and Europe (24%). Despite a comprehensive understanding of the cellular and molecular changes that occur during the development and progression in NAFLD, the molecular mechanism(s) driving those changes remain poorly understood.

What I/we do?

- 1) Cell and Molecular Biology of autophagy regulation in lipotoxic states such as NAFLD.
- 2) Epigenetic regulation of disease progression in NAFLD.
- 3) Cell and Molecular Biology of Endoplasmic reticulum stress and Oxidative stress in lipotoxicity.
- 4) Different pharmacological /genetic interventions to rescue lipotoxicity in liver.

TEACHING AREAS

- Cell Biology
- Molecular Biology
- Metabolism
- Immunology
- Enzymology
- Public health

ADMINISTRATIVE WORKS

- Member University Grants Committee, GDC Sopore (2020-2021)
- Member Career Counselling Committee, GDC Sopore (2021-Current)
- Member Health Care Committee, GDC Sopore (2020-2021)
- Member Admission Committee (Science Section), GDC Sopore (2020-2021)
- Observer JK SSRB Examination for Accounts Assistant (2020).

PUBLICATIONS

1. **Nissar UI Ashraf** and Mohammad Altaf. Epigenetics: an emerging field in the pathogenesis of Non alcoholic fatty liver disease. **Mutation Research: Reviews in Mutation research (2018), 778: 1-12 (IF: 5.65)**
➤ Link: <https://pubmed.ncbi.nlm.nih.gov/30454678/>
2. **Nissar UI Ashraf**, Love Sharma, Malik A Mudasir, Lone A Nazir, Sheikh A Umar, Parduman R Sharma, Ram A Vishwakarma, Sheikh A Tasduq. Chemical chaperone 4-phenyl butyric acid (4PBA) reduces hepatocellular lipid accumulation and cell death through induction of autophagy. **Journal of Lipid Research Sep (2017), 58(9): 1855-1868 (IF: 5.92)**
➤ Link: <https://pubmed.ncbi.nlm.nih.gov/28655725/>
3. **Nissar UI Ashraf**, Love Sharma, Sheikh A Tasduq. Palmitic acid induced lipotoxicity is associated with altered lipid metabolism, enhanced CYP 450 2E1 and intracellular calcium mediated ER stress in human hepatoma cells. **Toxicology Research 4 (2015): 1344-1358. (IF: 3.9)**
➤ Link: <https://academic.oup.com/toxres/article/4/5/1344/5573527>
4. **Nissar UI Ashraf** and Sheikh A Tasduq. Endoplasmic reticulum stress and Oxidative stress in the pathogenesis of Non-alcoholic fatty liver disease. **Free radical research (2015): 1-14. (IF: 4.14)**
➤ Link: <https://pubmed.ncbi.nlm.nih.gov/26223319/>
5. **Nissar UI Ashraf**, Farrukh MR, Kaiser PJ, Rafiq RA, Afnan Q, Bhushan S, Adil HS, Subhash BC, Tasduq SA. Effect of N-acetyl cysteine (NAC), an organosulfur compound from Allium plants, on experimentally induced hepatic prefibrogenic events in Wistar rat. **Phytomedicine. 2013 Jul 15;20(10):828-33. (IF: 5.34)**
➤ Link: <https://pubmed.ncbi.nlm.nih.gov/23578993/>
6. Mufti Rana Farrukh, **Nissar UI Ashraf**, Kaiser J Peerzada, Quadri Afnan, Praduman R Sharma, Shashi Bhushan, Sheikh A Tasduq. Glycyrrhizic acid (GA) inhibits Reactive Oxygen species mediated photodamage by blocking ER stress and MAPK pathway in UV-B irradiated human skin fibroblasts. **Journal of Photochemistry and Photobiology B: Biology 148 (2015): 351-357. (IF: 6.25)**
➤ Link: <https://pubmed.ncbi.nlm.nih.gov/26009870/>
7. Pathania, A. S., Guru, S. K., **Nissar UI Ashraf**, Riyaz-Ul-Hassan, S., Ali, A., Tasduq, S. A., ... & Bhushan, S. A novel stereo bioactive metabolite isolated from an endophytic fungus induces

caspase dependent apoptosis and STAT-3 inhibition in Human leukemia cells. **European journal of Pharmacology 765 (2015): 75-85. (IF : 4.43)**

➤ Link: <https://pubmed.ncbi.nlm.nih.gov/26291658/>

8. Farrukh MR, Nissar UI Ashraf, Afnan Q, Rafiq RA, Sharma L, Amin S, Kaiser P, Sharma PR, Tasduq SA. Oxidative stress mediated Ca(2+) release manifests endoplasmic reticulum stress leading to unfolded protein response in UV-B irradiated human skin cells. **J Dermatol Sci. 2014 Jul;75(1):24-35. (IF: 4.56)**

➤ Link: <https://pubmed.ncbi.nlm.nih.gov/24794973/>

9. Afnan Q, Adil MD, Nissar UI Ashraf, Rafiq AR, Amir HF, Kaiser P, Gupta VK, Vishwakarma R, Tasduq SA. Glycyrrhizic acid (GA), a triterpenoid saponin glycoside alleviates ultraviolet-B irradiation-induced photoaging in human dermal fibroblasts. **Phytomedicine. 2012 May 15;19(7):658-64. (IF: 5.34)**

➤ Link: <https://pubmed.ncbi.nlm.nih.gov/22516896/>

➤ **Manuscript under Preparation/Communication:**

10. Nissar UI Ashraf et al. Human carboxylesterase 1 (CES1) reduces triacylglycerol turnover and fatty acid oxidation in McArdle-RH7777 cells (**Manuscript under preparation**).

11. Nissar UI Ashraf et al. "mTORc1-G9a-H3K9me2 axis negatively regulates autophagy in fatty acid-induced lipotoxicity" (**Manuscript Communicated**)

12. Nissar UI Ashraf et al: Crosstalk between Epigenetic mechanisms and Autophagy: Implications for Non alcoholic fatty liver Disease pathogenesis and treatment (**Manuscript Communicated**)

**PUBLIC AWARENESS ARTICLES/OPINION PIECES IN LOCAL DAILIES
(NEWSPAPERS)**

1. An Emerging Public health concern (NAFLD): Greater Kashmir,
2. Fatty Liver Disease from consumption of Soft Drinks: Kashmir Reader
3. Management of Non alcoholic fatty liver Disease, Rising Kashmir
4. Non alcoholic fatty liver disease (NAFLD) and Non alcoholic Steatohepatitis (NASH): Kashmir Reader

ABSTRACTS PRESENTED IN CONFERENCES/SYMPOSIA

- 1) Attended International conference on Genomic instability and cancer-2007, held at University of Kashmir, Srinagar, from July 22-26, 2007
- 2) **Nissar et al**, Potential chemoprevention of N- Nitrosodiethylamine induced pre neoplastic events by Acteoside in Wistar rat: XXIX Annual conference of the society of Toxicology held at the Food and Drug Toxicology Research centre, National Institute of Nutrition, Indian Council of Medical research, Hyderabad, November 4-7, 2009 (**Poster Presentation**)
- 3) **Nissar et al**, Palmitate induced CD36 and SREBP1 upregulation is associated with intracellular Ca²⁺ mediated ER Stress and CYP2E1-induced oxidative stress in *invitro* models of NAFLD/NASH: 5th International conference on Translational Cancer Research, New Delhi, February 6-9, 2014 (**Oral Presentation**)
- 4) Attended 101st Indian Science Congress (Theme: Innovations in Science and Technology for Inclusive Development) held at University of Jammu, Jammu from 3-7th February 2014.
- 5) **Nissar et al**, Chemical Chaperone 4-phenyl butyric acid (4PBA) reduces hepatocellular lipid accumulation and lipotoxicity through induction of Autophagy: 25th Annual Scientific meeting of Indian National Association for study of Liver, New Delhi, August 3-6, 2017 (**Award Winner**).
- 6) **Nissar et al**, Inhibition of Endoplasmic reticulum stress by 4 phenyl butyric acid reduced lipotoxicity and lipid accumulation through induction of autophagy in human hepatoma cells. 4th International Conference on Recent advances in Engineering sciences, Chandigarh , India; 26th Nov, 2017 (**Oral Presentation**)
- 7) **Nissar et al**, Palmitate induced lipotoxicity is associated with intracellular Ca²⁺ mediated ER stress and CYP2E1 oxidative stress in human liver cells; International Conference on Recent advances in Science, Agriculture, Engineering and Management; Bathinda, Panjab, India; 20th Nov, 2017 (**Oral Presentation**)
8. **Nissar et al**, Chemical chaperone 4-phenyl butyric acid (4PBA) reduces hepatocellular lipid accumulation and lipotoxicity through induction of autophagy; EMBO conference themed: Autophagy: Cellular mechanism(s) and significance in health and disease: 11th to 13th December, 2017, Institute of Life Sciences, Bhubaneswar, Orissa, India (**Poster Presentation**)

9. Nissar Ul Ashraf: Autophagy induction reduces lipotoxicity and lipid accumulation in cellular model of Non Alcoholic Fatty Liver Disease (NAFLD) : 7th Annual conference of Indian Academy of Biomedical Sciences themed: Biochemical innovations: Translating cellular cues into novel therapeutics, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, India: April 20-22, 2018 (**Award Winner**).

10. Nissar Ul Ashraf: Activation of mTORC1-G9a-H3K9me2 axis suppresses autophagy in palmitate treated hepatoma cells: First Annual Research Meeting “Recent Trends in Cell and Molecular Biology” 19- 20 March 2019. Department of Biotechnology, University of Kashmir. (**Oral Presentation: Award winner**).

AWARDS/FELLOWSHIPS

- **DS Kothari Postdoctoral Fellowship**, UGC, Govt. of India (2018-2019)
- **Professor Noor Ul Islam award**, Indian Academy of Biomedical science-2018
- **National Postdoctoral Fellowship** DST-SERB, Govt of India (2016)
- **Senior Research Fellowship**, Joint CSIR-UGC, Govt. of India (2012 to 2016)
- **Junior Research Fellowship**, Joint CSIR-UGC, Govt. of India (2010 to 2012)
- **Best Paper award**, CSIR-IIIM Jammu, 2014. (on annual day function, 2014)

OTHER ACHIEVEMENTS

1. Qualified Jammu & Kashmir Public Services Commission examination with **First Rank** for selection as Assistant Professor at Higher Education Department, Govt. of J&K.
2. Qualified PhD Entrance examinations (Both written and Viva-Voce) at CSIR-IIIM, IISER Mohali and NBRC, Haryana, India
3. Qualified Entrance test for Pursuing Masers in Biochemistry at University of Kashmir
4. Qualified JK BOPEE Common Entrance Test for BUMS.
5. Successful Mentoring of various Research Students across various Research/Academic Institutes.

RESEARCH PROJECTS (PRINCIPAL INVESTIGATOR)

1. Understanding the role of epigenetic mechanisms in Non alcoholic fatty liver disease (NAFLD)
Funding Agency: DST –SERB, Govt. of India
Current Status: Completed (2017-2019)
2. Understanding the Epigenetic regulation of Cytochrome P450 2E1 and its crosstalk with Autophagy in Lipotoxicity: Implications for Non alcoholic fatty liver disease (NAFLD) pathogenesis and treatment
Funding Agency: DST –SERB, Govt. of India
Current Status: Ongoing

RESEARCH COLLABORATIONS

1. Chromatin and Epigenetics Lab, Centre for Interdisciplinary Research and Innovations, University of Kashmir, Hazratbal, Srinagar-190006
2. Department of Biotechnology, Central University of Kashmir, Ganderbal-191201

ADVISORY BOARD MEMBER

1. American Journal of Physiology, Biochemistry and Pharmacology
2. Journal of Applied Pharmaceutical Science

REVIEWED PAPERS FOR

1. American Journal of Physiology, Biochemistry and Pharmacology
2. PLoS One
3. BBA: Molecular and Cell Biology of Lipids
4. Journal of Applied Pharmaceutical Science

SKILLS

Molecular Biology and Biochemistry

Animal Cell culture, Flow Cytometry, Microscopy, SiRNA transfection, DNA/RNA extraction, Fatty acid oxidation and triglyceride turnover assays (radioactivity based), Lipase assay. PCR, RT-qPCR, Protein isolation/extraction, Western blot, Dot Blot, immunoprecipitation, ChIP, MeDIP, drug treatment, blood biochemistry, ELISA, Immunocytochemistry, Zymography, Adeno-Virus transduction, Live cell imaging using Confocal microscopy, Licensed user of radioactivity experiments,

Animal handling and care

- Mice/rat handling and dissection. Retro orbital injections, cutaneous injections, Blood collection from tail vein, Gas anaesthesia, cardiac puncture.
- Developed mouse model for NAFLD using C57BL/6J mice.
- Studied Pre-fibrogenic Events in Wistar Rat.

Computer Proficiency:

- Microsoft Office (Word, Excel, PowerPoint), Adobe Photoshop, EndNote, ChemBioDraw

Statistical Software:

- GraphPad Prism, Instat.

NATIONAL EXAMINATIONS QUALIFIED:

- Qualified CSIR-UGC NET JRF examination (June 2009)
- Qualified ICAR (Indian Council of Agricultural research) NET examination (January 2009)

TALKS DELIVERED ABROAD/WITHIN COUNTRY:

1. Molecular Mediators of hepatic Steatosis and Liver Injury; Disease Pathogenesis Series; `15 May, 2013, **Council of Scientific and Industrial Research-Indian Institute of Integrative Medicine (CSIR-IIIM), Jammu-180001**
2. Palmitate induced CD36 and SREBP1 upregulation is associated with intracellular Ca²⁺ mediated ER Stress and CYP2E1-induced oxidative stress in *invitro* models of NAFLD/NASH: **5th International conference on Translational Cancer Research, New Delhi, February 6-9, 2014**
3. Cellular and Molecular Mechanism of lipotoxicity in Non alcoholic fatty liver disease: Retreat Meeting, 30-31 May, 2016, Group on Molecular and Cellular Biology of Lipids, **University of Alberta, 11207-87 Ave, Edmonton, AB, Canada, T6G2S2.**
4. Role of Human Carboxylesterase CES1 in Hepatic Triacylglycerol Metabolism: Molecular and Cellular Biology group Research progress meeting, 17 Jan, 2107 **University of Alberta, 11207-87 Ave, Edmonton, AB, Canada, T6G2S2.**
5. Autophagy induction reduces lipotoxicity and lipid accumulation in cellular model of Non Alcoholic Fatty Liver Disease (NAFLD) : **7th Annual conference of Indian Academy of Biomedical Sciences themed: Biochemical innovations: Translating cellular cues into novel therapeutics, Sher-i-Kashmir Institute of Medical Sciences, Srinagar, India: April 20-22, 2018**
6. Activation of mTORC1-G9a-H3K9me2 axis suppresses autophagy in palmitate treated hepatoma cells: First Annual Research Meeting “**Recent Trends in Cell and Molecular Biology**” **19- 20 March 2019. Department of Biotechnology, University of Kashmir.**

TRAINING COURSES ATTENDED

1. Radiation Safety Course, University of Alberta, Canada, June 2016
(Course Grade: 90.63%)
2. WHMIS University Personnel, University of Alberta, Canada, June 2016
(Course Grade: 95%)
3. Concepts in Biosafety, University of Alberta, Canada, June 2016,
(Course Grade: 85%)
4. Laboratory Safety Training, University of Alberta, Canada, June 2016,
(Course Grade: 92%)
5. Animal Handling Training, University of Alberta, Canada, June 2016,
(Course Grade: Satisfactory)
6. Hands on training in Drug discovery and Bioinformatics, University of Kashmir,
March, 2019
7. Three weeks Induction Training Programme for newly appointed Assistant Professors
of Higher Education Department, Govt. of J&K (May 2019 - June 2019) at Govt.
College of Education (IASE) Cluster University Srinagar.
8. Four Weeks Induction/Orientation Programme for “Faculty in Indian Universities
/Colleges /Institute of Higher Education” from March 15- April 14, 2021; Teaching
Learning Centre, Ramanujan College, University of Delhi.

➤ **Personal Details:**

Name: Dr. Nissar Ul Ashraf

Name of Father: Mohammad Ashraf Ahanger

Name of Mother: Dilshada

Permanent Address: Mohalla Jalal Sahib, Old Town, Baramulla
Jammu & Kashmir-193101

Correspondence Address: Department of Biochemistry, Govt. Degree College, Sopore

Languages: Fluent in English, Hindi, Urdu and Kashmiri