


Curriculum Vitae

Full Name:	Dr. Rohit Mahar		
Designation:	Assistant Professor		
Department:	Chemistry		
Campus:	Srinagar Garhwal, H.N.B. Garhwal University (A Central University)		
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Google Scholar:	https://scholar.google.com/citations?user=19PymfEAAAAJ		
Education Qualification:	Degree	University	Year
	M.Sc. in Chemistry (Gold Medallist)	H.N.B. Garhwal University, Uttarakhand, India	2010
	Ph.D. in Chemistry	CSIR-Central Drug Research Institute, Lucknow, India / Jawaharlal Nehru University, New Delhi, India	2017
Teaching Experience:	1.5 Years	Research Experience: Post Docs. Oakland University and University of Florida, USA	05 Years
Research Experience: Industry TCG GreenChem, NJ, USA		08 Months	
Research Interest and Fields of Specialization			
1. Medicinal Chemistry:			
<ul style="list-style-type: none"> • Isolation of bioactive compounds from plants • Design and synthesis of heterocyclic compounds and derivatization of natural products • Structure elucidation of complex natural products and unprecedented synthetic compounds 			
2. 'Omics' Sciences specific focus to metabolomics, lipidomics, and fluxomics:			
<ul style="list-style-type: none"> • Biomedical application of Omics Sciences employing NMR/MRI, GC-MS, and LC-MS techniques • Dereplication of plant extracts to identify bioactive principles and isolate natural products • Analytical method development for quantitative analysis of metabolites (primary and secondary) 			
Honours & Awards			
1. Gold Medallist in M.Sc. Chemistry at H. N. B. Garhwal University, Uttarakhand (2010)			
2. DST-INSPIRE Fellowship (IF110080) from Department of Science and Technology, Government of India (GOI), New Delhi, India (2011)			
3. National Eligibility Test - Junior Research Fellowship (NET-JRF) conducted by Council of Scientific & Industrial Research-University Grants Commission, India (Dec. 2010, June, and Dec. 2011)			
4. Qualified Graduate Aptitude Test in Engineering (GATE) (2011 and 2016)			
5. Uttarakhand State Eligibility Test (USET) conducted by Kumaun University, Uttarakhand (2012)			
6. Junior Research Fellowship at CSIR-CDRI from UGC, New Delhi India (Jan. 2012 to Jan. 2014)			
7. Senior Research Fellowship at CSIR-CDRI from UGC, New Delhi India (Jan. 2014 to March 2017)			
8. Post-Doctoral Fellowship from the National Institute of Health (NIH) at Oakland University, Michigan, USA (March 2017 to March 2018)			
9. Post-Doctoral Fellowship from the National Institute of Health (NIH) at the University of Florida, Florida, USA (March 2018 to March 2022)			
10. National Post-Doctoral Fellowship (N-PDF/2016/001714) , by Science and Engineering Research Board, DST, GOI, New Delhi, India (Awarded, Dec. 2016)			
Editor/Guest Editor Metabolites			
Reviewer Board Member Nutrients			

Reviewer of the Journals

Peer reviewer for the following journals: Magnetic Resonance in Medicine, NMR in biomedicine, Natural Products Research, Molecules, Metabolites, Nutrients, Marine Drugs, Processes, Biomolecules, Antioxidants, Applied Sciences, Plant Foods for Human Nutrition, International Journal of Molecular Sciences, Foods, Sustainability, Magnetochemistry, diseases, and Frontiers in Oncology.

Member of Academic Institutions

- 1.
- 2.

Membership of Scientific Organizations

1. Lifetime member of the National Magnetic Resonance Society (**NMRS**) since August 2012
- 2.

Research Supervision (No. of Ph.D. Degree Awarded/Submitted/Registered)

Research Projects/ MoU undertaken

1. Title, Funding Agency, Total Cost, Completed/Ongoing
- 2.

Administrative Experience

- 1.
- 2.

Scientific Visits Abroad/ International Collaboration

- 1.
- 2.

Conference/Symposium/Workshop Attended during last five years (2017-2022)

International

1. Active segmentation to achieve an integrated LC-MS-NMR platform for identification of lipid isomers "70th ASMS Conference on Mass Spectrometry and Allied Topics (ASMS 2022)", in Minneapolis, MN, USA, 5th to 9th June 2022. (**Oral Presentation**).
2. Investigating β -Lapachone Mediated Metabolic Disruption Using Stable Isotope Tracers. "Experimental Biology", Philadelphia, USA, from 2nd to 5th April 2022. (**Poster presentation**).
3. Deuterium Metabolic Imaging (DMI): A Robust Method for Estimating Glucose Turnover" at "BMB Journal Club seminar" on 16th March 2021. (**Oral presentation**).
4. Carbon-13 Nuclear Magnetic Resonance (¹³C-NMR) for the study of intermediary metabolism at "MAGLAB, National High Magnetic Field Laboratory, Tallahassee on 23rd March 2021. (**Oral presentation**).
5. Deuterium MRI for HDO Imaging of the Rat Brain Following Metabolism of [²H₇]glucose. "International Society for Magnetic Resonance in Medicine, Inc. (ISMRM)", 15th to 20th May 2021. (**Oral presentation**).
6. Branched-chain amino acids alter the hepatic *de novo lipogenesis* - a potential implications for nonalcoholic fatty liver disease (NAFLD). "48th Southeastern Magnetic Resonance Conference", held at University of Florida Gainesville, FL, 25th to 27th October 2019. (**Poster presentation**).
7. Segmented Flow Strategies for Interfacing Microflow NMR with LC-MS to Identify the Volume and Mass-limited Metabolites and Lipids. "60th Experimental Nuclear Magnetic Resonance Conference (ENC)" held at Asilomar Conference Center, California, 7th to 12th April 2019. (**Oral presentation**).
8. ¹³C Isotopomer analysis of intermediary metabolism in metabolic stages of pupae of the flesh fly. "2019 COM Research Poster Session", held at University of Florida, USA on 19th February 2019. (**Poster presentation**).
9. ¹³C Isotopomer Analysis of Intermediary Metabolism in Metabolic Stages of Pupae of the Flesh Fly. "60th Experimental Nuclear Magnetic Resonance Conference (ENC)" held at Asilomar Conference Center, Pacific Grove, California, USA, 7th to 12th April 2019. (**Poster presentation**).
10. A novel data strategy towards an integrated LC/MS-NMR workflow for identifying unknown lipids "67th ASMS

Conference on Mass Spectrometry and Allied Topics” held in Atlanta USA from 2nd to 6th June 2019. (**Poster presentation**).

Conference/Symposium/Workshop Organized during last five years (2017-2022)

1. **Demo and presentation** in NMR Metabolomics and ¹³C Fluxomics workshop conducted by NHMFL AMRIS Facility, University of Florida, Gainesville, FL, 7th to 11th, 2018.

Publications during last five years (2017-2022)

Journals

1. Metabolic Signatures Associated with Oncolytic Myxoma Viral Infections. **Mahar, Rohit**; Ragavan, Mukundan; Chang, Mario C.; Hardiman, Savannah; Moussatche, Nissin; Behar, Adam; Renne, Rolf; and Merritt, Matthew E. **Nature Scientific Reports**, 12, 12599, 2022. (Impact Factor = **5.00**).
2. Assessment of tissue specific distribution and seasonal variation of alkaloids in *Alstonia scholaris*. **Mahar, Rohit**; Manivel, Nagarajan; Kanojiya, Sanjeev ; Mishra, Dipak K.; and Shukla, Sanjeev K. **Metabolites**, 12, 607, 2022. (Impact Factor = **5.58**).
3. Synergistic Effect of β -Lapachone and Aminooxyacetic Acid on Central Metabolism in Breast Cancer. Chang*, Mario C.; **Mahar*, Rohit**, McLeod, Marc A.; Giacalone; Anthony; Huang, Xiumei; and Merritt, Matthew E. **Nutrients**, 14, 3020, 2022. (***Equally contributed**, Impact Factor = **6.70**).
4. Regulation of metabolism by mitochondrial MUL1 E3 ubiquitin ligase. Cilenti, Lucia; **Mahar, Rohit**; Gregorio, Jacopo Di; Ambivero, Camilla T.; Merritt, Matthew E.; Zervos, Antonis S. **Frontiers in Cell and Developmental Biology**, 11, 904728, 2022. (Impact Factor = **6.08**).
5. Enrichment of Hepatic Glycogen and Plasma Glucose from H₂¹⁸O Informs Gluconeogenic and Indirect Pathway Fluxes in Naturally feeding Mice. Coelho*, Margarida; **Mahar*, Rohit**; Belew, Getachew D.; Torres, Alejandra; Barosa, Cristina; Cabral, Fernando; Viegas, Ivan; Gastaldelli, Amalia; Mendes, Vera M.; Manadas, Bruno; Jones, John G.; Merritt, Matthew E. **NMR in Biomedicine**, e4837, 2022. (***Equally contributed**, Impact Factor = **4.48**).
6. Lipogenesis mediated by OGR1 regulates metabolic adaptation to acid stress in cancer cells via autophagy. Pillai, Smitha; Mahmud, Iqbal; **Mahar, Rohit**; Griffith, Crystal; Langsen, Michael; Jonathan; Wojtkowiak, Jonathan W.; Swietach, Pawel; Gatenby, Robert A.; Bui, Marilyn; and Merritt, Matthew E.; McDonald, Patricia; Garrett, Timothy J.; Gillies, Robert J. **Cell Report**, 39 110796, 2022. (Impact Factor = **10.00**).
7. Measuring NQO1 bioactivation using [²H₇]glucose. **Mahar, Rohit**; Chang Mario C.; and Merritt, Matthew E. **Cancers**, 13, 4165, 2021. (Impact Factor = **6.57**).
8. ROS and hypoxia signaling regulate periodic metabolic arousal during insect dormancy to coordinate glucose, amino acid, and lipid metabolism. Chen, Chao; **Mahar, Rohit**; Merritt, Matthew E.; Denlinger, David L.; and Hahn, Daniel A. **Proceedings of the National Academy of Sciences (PNAS)**, 118, 1, 2021. (Impact Factor = **12.78**).
9. Deuterated water imaging of the rat brain following metabolism of [²H₇]glucose. **Mahar, Rohit**; Zeng, Huadong; Giacalone, Anthony; Ragavan, Mukundan; Mareci, Thomas H.; and Merritt, Matthew E. **Magnetic Resonance in Medicine**, 85, 3049-3059, 2021. (Impact Factor = **3.73**).
10. Quantitative analysis of bioactive carbazole alkaloids in *Murraya koenigii* (L.) from six different climatic zones of India using UPLC-MS/MS and their principal component analysis. Nandan, Shiv; Singh, Sumit K.; Singh, Pratibha; Bajpai, Vikas; Mishra, Ashwantee K.; Joshi, Trapti; **Mahar, Rohit**; Shukla, Sanjeev K.; Mishra, Dipak K.; Kanojiya, Sanjeev. **Chemistry & Biodiversity**, 18, e2100557, 2021. (Impact Factor = **2.74**).
11. HDO production from [²H₇]glucose quantitatively identifies Warburg metabolism. **Mahar, Rohit**; Donabedian, Patrick L.; Merritt, Matthew E. **Nature Scientific Reports**, 10, 1, 2020. (Impact Factor = **5.00**).
12. Branched chain amino acids and carbohydrate restriction exacerbate ketogenesis and hepatic mitochondrial oxidative dysfunction during NAFLD. Muyorikandy, Muhammed S.; McLeod, Marc; Maguire, Meghan; **Mahar, Rohit**; Kattapuram, Nathan; Zhang, Christine; Surugihalli, Chaitra; Muralidaran, Vaishna; Vavilikolanu, Kruthi; Mathews, Clayton E.; Merritt, Matthew E.; Sunny, Nishanth E. **Federation of American Societies for Experimental Biology (FASEB)**, 34,14832–14849, 2020. (Impact Factor = **5.19**).
13. ¹⁵N-carnitine, a novel endogenous hyperpolarized MRI probe with long signal lifetime. Morze, Cornelius von; Engelbach, John A.; Reed, Galen D.; Chen, Albert P.; Blazey, Tyler; **Mahar, Rohit**; Malloy, Craig R.; Garbow, Joel R.; Merritt, Matthew E. **Magnetic Resonance in Medicine**, 2020. (Impact Factor = **3.73**).

14. Quantitative measurement of T_2 , $T_{1\rho}$ and T_1 relaxation times in articular cartilage and cartilage-bone interface by SE and UTE imaging at microscopic resolution. **Mahar, Rohit**; Batool, Syeda; Badar, Farid; Xia, Yang. **Journal of Magnetic Resonance**, 297, 76-85, 2018. (Impact Factor = **2.73**).
15. Quantitative μ MRI and PLM study of rabbit humeral and femoral head cartilage at sub-10 μ m resolutions. Batool, Syeda; **Mahar, Rohit**; Badar, Farid; Tetmeyer, Anthony A.; Xia, Yang. **Journal of Orthopaedic Research**, 38, 1052-1062, 2020. (Impact Factor = **3.49**).
16. Singh, Kartikey; Joshi, Prince; **Mahar, Rohit**; Shukla, Sanjeev K.; and Tripathi, Rama Pati. Synthesis and antiplasmodial activity of purine-based C-nucleoside analogues. **Med. Chem. Commun.**, 9, 1232, 2018. (Impact Factor = **3.59**).
17. Synthesis of novel glycosyl-1,2,3-1H-triazolyl methyl quinazolin-4(3H)-ones and their effect on GLUT4 translocation. Ramakrishna, K. K. G.; Thakur, R. K.; Pasam, Venkata R.; Pandey, Jyotsana; **Mahar, Rohit**; Shukla, Sanjeev K.; Tamrakar, Akhilesh K.; Tripathi, Rama Pati. **Tetrahedron**, 73, 187-203, 2017. (Impact Factor = **2.39**).
18. Pyranocarbazoles from *Murraya koenigii* (L.) Spreng. as antimicrobial agents. Joshi, Trapti; Jain, Tushar; **Mahar, Rohit**; Singh, Sumit K.; Srivastava, Piyush; Shukla, Sanjeev K.; Mishra, Dipak K.; Bhatta, R. S.; Banerjee Dibyendu; Kanojiya, Sanjeev. **Natural Products Research**, 31, 1-5, 2017. (Impact Factor = **2.86**).

Total Number of Research Publications: 34 (Peer-reviewed and SCI journals)

Patents

1. U.S. Patent Cooperation Treaty **PCT/US2021/012400**, filed on January 7, 2021.
Title: Deuterium Magnetic Resonance Imaging.
Inventors: **Rohit Mahar**, Patrick Donabedian, Matthew E. Merritt, Ref No.: T17984WO001
2. U.S. Patent Application **Serial No. 62/992,726**, filed on March 20, 2020.
Title: Deuterium magnetic resonance imaging for *in vivo* detection of Warburg effect.
Inventors: Patrick Donabedian, **Rohit Mahar**, Matthew E. Merritt, Ref No.: T17984US001