

**Gaurav Sharma, PhD, MBA**

Assistant Professor at UT Southwestern Medical Center, Dallas, Texas, United States

Email: [Gaurav.Sharma@UTSouthwestern.edu](mailto:Gaurav.Sharma@UTSouthwestern.edu)<https://twitter.com/gauravsharmaphd>; <https://www.linkedin.com/in/gaurav-sharma-phd-mba-10918527/>**Version date:** 08/30/2022**Proposed for:** UTSW-CVTS profile webpage**1. Education:**

- 07/2004-06/2007 *Bachelor of Science (B.Sc.)*, Biology and Chemistry, Agra College, Dr. B. R. Ambedkar University, Agra, India
- 07/2007-07/2009 *Master of Science (M.Sc.)*, Biotechnology, School of Life Sciences, Dr. B. R. Ambedkar University, Agra, India
- 07/2010-04/2016 *Doctor of Philosophy (Ph.D.)*, Biomedical Sciences, All India Institute of Medical Sciences (AIIMS), New Delhi, India
- 07/2019-07/2020 *Master of Business Administration (MBA)*, Quantic School of Business and Technology, Washington DC, USA

**2. Career/Academic Appointments:**

- 07/2010-07/2012 *Junior Research Fellow*, Department of NMR and MRI, All India Institute of Medical Sciences (AIIMS), New Delhi, India
- 07/2012-07/2015 *Senior Research Fellow*, Department of NMR and MRI, All India Institute of Medical Sciences (AIIMS), New Delhi, India
- 07/2015-03/2016 *Senior Research Fellow*, School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi, India
- 03/2016-05/2016 *Research Associate*, School of Computational and Integrative Sciences, Jawaharlal Nehru University, New Delhi, India
- 06/2016-06/2022 *Postdoctoral Researcher*, Advanced Imaging Research Center, UT Southwestern Medical Center, Dallas, TX, USA
- 07/2022- present *Assistant Professor*, Department of Cardiovascular and Thoracic Surgery, UT Southwestern Medical Center, Dallas, TX, USA

**3. Professional Certifications:**

- 04/2021-05/2021 *AI for Medicine Specialization* (Included 3 certificates: 1. AI for Medical Diagnosis; 2. AI for Medical Prognosis; and 3. AI for Medical Treatment), DeepLearning.AI and Coursera Inc.
- 04/2021-04/2021 *Conflicts of Interest in Biomedical Research* from Penn Medicine, University of Pennsylvania Health System, Philadelphia, PA, USA
- 04/2021-04/2021 *Ethics and Trial Design* from Penn Medicine, University of Pennsylvania Health System, Philadelphia, PA, USA
- 04/2021-04/2021 *Ethics of Research with Human Subjects* from Penn Medicine, University of Pennsylvania Health System, Philadelphia, PA, USA
- 08/2020-08/2020 *Research HIPAA* from Collaborative Institutional Training Initiative (CITI) Program, Fort Lauderdale, FL, USA
- 08/2020-08/2020 *Human Subject Protection (HSP) Course (Researchers)* from Collaborative Institutional Training Initiative (CITI) Program, Fort Lauderdale, FL, USA

- 08/2020-08/2020 *Good Clinical Practice (GCP) Course (Researchers)* from Collaborative Institutional Training Initiative (CITI) Program, Fort Lauderdale, FL, USA
- 08/2020-08/2020 *Research HIPAA* from Collaborative Institutional Training Initiative (CITI) Program, Fort Lauderdale, FL, USA
- 08/2019-09/2019 *Clinical Research Training* from the NIH Office of Clinical Research Training and Medical Education, Bethesda, Maryland, USA
- 11/2018-12/2018 *Peer-review training for scientific researchers* from ACS Reviewer Lab™, American Chemical Society, Washington DC, USA
- 10/2017-12/2017 *Management in Health* from World Bank Institute, Washington DC, USA
- 03/2014-04/2014 *Basics of Health Economics* from World Bank Institute, Washington DC, USA
- 07/2012-10/2012 *Basics of Patents drafting (DL-320)* from World Intellectual Property Organization (WIPO) Academy, Geneva, Switzerland.
- 06/2012-08/2012 *Patents (DL-301)* from World Intellectual Property Organization (WIPO) Academy, Geneva, Switzerland.
- 11/2011-02/2012 *Intellectual Property Management (DL-450)* from World Intellectual Property Organization (WIPO) Academy, Geneva, Switzerland.
- 10/2010-11/2010 *Intellectual Property Rights (IPR) (DL-101)* from World Intellectual Property Organization (WIPO) Academy, Geneva, Switzerland.

#### 4. Professional Honors & Recognition:

##### *International/National/Regional*

- 2010 – 2015 Predoctoral Fellowships (Junior and Senior Research Fellowships) from Indian Council of Medical Research
- 2014 Awarded International Travel Grant from Indian Council of Medical Research (ICMR), India
- 2018 – 2020 Postdoctoral Fellowship from American Heart Association
- 2017 & 2013 Awarded Educational Stipend from International Society of Magnetic Resonance in Medicine (ISMRM), USA
- 2019 Awarded 1<sup>st</sup> place in Poster Presentation at Annual Symposium of In vivo Center of Metabolism, UT Southwestern Medical Center, USA. (Cash Prize: \$250)

#### 5. Grant/Clinical Trials History:

##### *Current Grants*

None

##### *Current Clinical Trials/ Clinical Feasibility Trials*

Agency: UT Southwestern Medical Center, TX  
 ID#: IRB #STU-2020-0953  
 Title: A Novel Method to Image Viable Myocardium  
 PI: Gaurav Sharma, MSc, PhD, MBA  
 Role on project: Principal Investigator  
 Percent effort: 100%  
 Total costs: \$6,300/patient (of which US \$20,000 indirects)  
 Project period: 07/1/2021 – 06/30/2025

##### *Past Grants*

Agency: American Heart Association (Dallas, TX, United States)  
 ID#: 18POST34050049  
 Title: Assessing Hibernating Myocardium with Hyperpolarized <sup>13</sup>C MRI  
 PI: Gaurav Sharma, MSc, PhD, MBA

Role on Project: Principal Investigator  
 Percent effort: 100%  
 Total costs: USD 1,06,532 (includes indirects)  
 Project period: 07/01/2018 – 06/30/2020

Agency: Indian Council of Medical Research  
 ID#: 3/1/3/JRF-2009/MPD-95(31853)  
 Title: NMR spectroscopic analysis and anticancer evaluation of select ayurvedic polyherbal formulations  
 PI: Gaurav Sharma, MSc, PhD, MBA  
 Role on Project: Principal Investigator  
 Percent effort: 100%  
 Total costs: INR 12,96,000 (includes indirects)  
 Project period: 07/28/2010 – 07/27/2015

## 6. Invited Speaking Engagements, Presentations, Symposia & Workshops:

### *International/National*

1. “Novel insights into the metabolic diseases using Carbon-13 Magnetic Resonance”, Merck & Co., Inc. West Point, Pennsylvania, March 2022.
2. “Novel insights into the metabolic diseases using stable isotope tracer technology” Texas Tech University Health Sciences Center, El Paso, Texas, February 2022.

## Peer-Reviewed Presentations & Symposia Given at Meetings:

### *International/National*

- 1.
2. **Sharma G**, Nesmine M, Trigo M, Rahim M, Hever T, Wen X, Funk A, Malloy CR, Young J, Khemtong C. Oxidation of hyperpolarized [1-<sup>13</sup>C]pyruvate in isolated rat kidneys. *World Molecular Imaging Congress (2022)*
3. Nesmine M, Harrison C, **Sharma G**, Funk A, Khemtong C. Doubly <sup>13</sup>C-labeled ethyl acetyl carbonate for simultaneous measurements of pH and acetate metabolism in tissues by hyperpolarized <sup>13</sup>C MR. *World Molecular Imaging Congress (2022)*
4. Inigo MMR, Fletcher JA, Kucejova B, **Sharma G**, Deja S, Fu X, Burgess SC. The Malic Enzyme-1 links pyruvate carboxylase mediated anaplerosis to redox state in liver. *Diabetes (2022)*
5. **Sharma G**, Kim CW, Wen X, Sherry AD, Khemtong C, Malloy CR and Jay D. Horton JD. Effect of Knockout of Two Acetyl-CoA Carboxylase Isoforms in the Isolated Mouse Heart on Oxidation of Exogenous and Endogenous Energy Sources. *Joint Annual Meeting ISMRM-ESMRMB, London, UK (2022)*
6. **Sharma G**, Vela RJ, Powell L, Deja S, Mizerska M, Jessen ME, Burgess SC, Malloy CR, Peltz M. Preservation of Human Hearts for Transplantation: Comparison of Metabolic Indicators after Conventional and Temperature Controlled Storage. *Joint Annual Meeting ISMRM-ESMRMB, London, UK (2022)*
7. **Sharma G**, Funk AM, Wen X, Harrison C, Nesmine M, Wynn RM, Sherry AD, Khemtong C, Malloy CR. Noninvasive in vivo assessment of cardiac metabolism in dobutamine-stressed ischemic rat hearts using hyperpolarized <sup>13</sup>C MRI. *AHA Scientific Sessions, Dallas, USA (2020)*.
8. Thapa B, Khalighinejad P, Parrott D, Jordan VC, **Sharma G**, Chirayil S and Sherry AD. Noninvasive imaging of  $\beta$ -cell function in the rat pancreas by MRI using a zinc-responsive contrast agent. *Pacificchem, Hawaii, USA (2020)*

9. Alger JR, **Sharma G**, Sherry AD Malloy CR. tcaCALC: MATLAB Software for Quantitative Analysis of  $^{13}\text{C}$  Metabolic Isotopic Tracer Experiments. *Proc. Intl. Soc. Mag. Reson. Med.*, Paris, France, 2849 (2020)
10. **Sharma G**, Funk AM, Wen X, Harrison C, Nesmine M, Wynn RM, Malloy CR, Sherry AD, Khemtong C. In vivo evaluation of metabolic response to dobutamine stimulation in ischemic rat hearts using hyperpolarized C-pyruvate. *Proc. Intl. Soc. Mag. Reson. Med.*, Paris, France, 2264 (2020).
11. **Sharma G**, Chen W, Jiang W, Anderson AL, Malloy CR, Sherry AD, Khemtong C. Response of ischemic myocardium to adrenergic stimulation as detected by hyperpolarized [1- $^{13}\text{C}$ ]pyruvate. *Circulation Research*. 125:A565 (2019).
12. **Sharma G**, Funk AM, Wu CY, Wen X, Nesmine M, Wynn RM, Malloy CR, Sherry AD, Chuang DT, Khemtong C. Pyruvate dehydrogenase kinase knockout restores hepatic pyruvate oxidation in STZ-induced diabetic mice as revealed by hyperpolarized  $^{13}\text{C}$ -MRI. *Proc. Intl. Soc. Mag. Reson. Med.*, Montreal, Canada (2019).
13. Maptue NR, **Sharma G**, Trigo M, Funk AM. Hever T, Wen X, Malloy CR, Sherry AD, Khemtong C. Metabolism of hyperpolarized [1- $^{13}\text{C}$ ]pyruvate in isolated perfused kidneys. *Proc. Intl. Soc. Mag. Reson. Med.*, Montreal, Canada 4323 (2019).
14. **Sharma G**, Malloy CR, Sherry AD, Khemtong C. In-vivo metabolism of co-hyperpolarized [1- $^{13}\text{C}$ ] pyruvate and [1,3- $^{13}\text{C}$ ] acetoacetate identifies cytosolic and mitochondrial redox in ischemic perfused hearts. *Proc. Intl. Soc. Mag. Reson. Med.*, Paris, France (2018).
15. **Sharma G**, Wu CY, Wynn RM, Chuang DT, Malloy CR, Khemtong C, Sherry AD. Metabolism of Hyperpolarized Pyruvate Detects Knockout of Pyruvate Dehydrogenase Kinase. *Proc. Intl. Soc. Mag. Reson. Med.*, Hawaii, USA, 3206 (2017).
16. Jayasundar R, **Sharma G**, Velpandian T, Chauhan SS. NMR-based analysis of combinatorial effects of chemotherapy drug and polyherbal formulation. *World Molecular Imaging Conference*, New York, USA (2016).
17. Ghosh I, Mitra A, Parekh N, Pudi V, Chakrabarty B, Dharanipragada P, Ramya Gurrapu, Karuputhula NB, Sekhwal MK, **Sharma G**<sup>#</sup>, Kiranraj SR, Maramreddy MK, Srivani VP, Teja D. *CCPM v3.4: Towards Collaborative Metabolomics. International Plant Physiology Conference (IPPC)*, New Delhi, India, PD234 (2015). <sup>#</sup> Presenting Author
18. **Sharma G**, Ghatak S, Verma AK, Velpandian T, Rama Jayasundar R. NMR based pharmacometabolomics for evaluating the drug response of polyherbal formulations, *23<sup>rd</sup> Annual Meeting of ISMRM (International Society for Magnetic Resonance in Medicine)*, Toronto, Canada, 1108 (2015).
19. **Sharma G**, Verma AK, Velpandian T, Jayasundar R. NMR based pharmacometabolomics of the response of chick chorioallantoic membrane to treatment with anti-angiogenic ayurvedic formulations. *Annual Proceedings of NMRS (National Magnetic Resonance Society)*, Tezpur University, India, P31 (2014)
20. **Sharma G**, Sharma S, Velpandian T, Jayasundar R. NMR phytochemical profiling and evaluation of antiaging potential of medicinal plants. *Annual Proceedings of NMRS (National Magnetic Resonance Society)*, Tezpur University, India, P32 (2014)
21. Verma AK, **Sharma G**, Velpandian T, Jayasundar R. NMR phytoanalysis and evaluation of antineovascularization of medicinal plants. *Annual Proceedings of NMRS (National Magnetic Resonance Society)*, Tezpur University, India, P33 (2014).
22. **Sharma G**, Sharma S, Verma A, Velpandian T, Jayasundar R. *Apoptotic DNA fragmentation in human hepatocarcinoma cells by a polyherbal formulation*, World Molecular Imaging Conference (WMIC), Seoul, Korea (2014).
23. **Sharma G**, Sakshi Sharma S, Verma A, Velpandian T, Jayasundar R. *NMR phytometabolomics for characterizing an anticancer polyherbal formulation and its ingredients*, 55<sup>th</sup> ENC (Experimental Nuclear Magnetic Resonance Conference), Boston, USA, 193 (2014).
24. **Sharma G**, Jayasundar R, Velpandian T, Singh R, Chauhan SS. *NMR in the study of polyherbal formulations*, World Molecular Imaging Conference (WMIC), Savannah, USA (2013).
25. **Sharma G**, Jayasundar R, Chauhan SS, Velpandian T. Therapeutic potential of anticancer polyherbal formulations. *Molecular Cancer Therapeutics*, C108, 12, 11 (2013) Proceedings of

- the AACR-NCI-EORTC International Conference: Molecular Targets and Cancer Therapeutics; 2013 Oct 19-23; Boston, MA.
26. **Sharma G**, Jayasundar R, Velpandian T, Singh R, Chauhan SS. NMR metabolic profiling of the response in Hep-G2 cancer cells to treatment with anticancer polyherbal formulations, *54<sup>th</sup> ENC (Experimental Nuclear Magnetic Resonance Conference)*, Asilomar, Pacific Grove, CA, USA, 192 (2013).
  27. **Sharma G**, Jayasundar R, Chauhan SS, Velpandian T. *NMR phytochemical profiling of polyherbal formulations, 54<sup>th</sup> ENC (Experimental Nuclear Magnetic Resonance Conference)*, Asilomar, CA, USA, 193 (2013).
  28. Rai PK, Jayasundar R, **Sharma G**, Pathak AK, Ghatak S, Watal G, Rai AK. NMR, LIBS and FTIR based metabolomics of an antidiabetic herbal formulation. *Proc. Intl. Soc. Mag. Reson. Med.*, Salt Lake City, USA, 5684 (2013).
  29. **Sharma G**, Jayasundar R, Velpandian T, Singh R, Chauhan SS. NMR metabolomics of drug response to antineoplastic polyherbal formulations studied in human hepatocellular carcinoma cells. *Proc. Intl. Soc. Mag. Reson. Med.*, Salt Lake City, Utah, USA, 3430 (2013).
  30. **Sharma G**, Jayasundar R, Velpandian T, Singh R, Chauhan SS, Kapoor V, Das SN. Anti-neoplastic activity in human hepatoma cell line and NMR Spectroscopy based metabolic fingerprinting of polyherbal formulations. *Journal of Carcinogenesis*, 11, S30 (2012).
  31. **Sharma G**, Jayasundar R, Velpandian T, Singh R, Chauhan SS. Evaluation of anti-angiogenic activity of ayurvedic formulations using Chick Chorioallantoic Membrane Assay. *Journal of Carcinogenesis*, 11, S31, 2012.
  32. Rai PK, **Sharma G**, Ghatak S, Watal G, Rai AK, Jayasundar R. Spectroscopic Analysis and Anti-diabetic Activity of a Polyherbal Formulation: NMR and LIBS Based Studies. *53<sup>rd</sup> ENC (Experimental Nuclear Magnetic Resonance Conference)*, Miami, USA, 277 (2012).
  33. **Sharma G**, Jayasundar R, Rai PK, Chauhan SS, Velpandian T. NMR metabolomics and anticancer potential evaluation of an ayurvedic formulation, *Annual Proceedings of NMRS (National Magnetic Resonance Society)*, IISc Bangalore, India, P12 (2012).
  34. **Sharma G**, Jayasundar R, Chauhan SS, Velpandian T. NMR spectroscopic characterization and evaluation of anticancer potential of a polyherbal formulation on HepG2 cell line. *53<sup>rd</sup> ENC (Experimental Nuclear Magnetic Resonance Conference)*, Miami, USA, 293 (2012).
  35. **Sharma G**, Jayasundar R, Rai PK, Chauhan SS, Velpandian T. *NMR Metabolomic and LIBS elemental profiling of anticancer herbal formulation. Proc. Intl. Soc. Mag. Reson. Med.*, Melbourne, Australia, 1542 (2012).
  36. **Sharma G**, Jayasundar R, Rai PK, Chauhan SS, Velpandian T. *NMR Metabolomic profiling and antiangiogenic potential evaluation of polyherbal formulation. 244<sup>th</sup> ACS (American Chemical Society) National Meeting*, Philadelphia, Pennsylvania, USA 10750 (2012).

### Regional

1. Thapa B, Khalighinejad P, Parrott D, **Sharma G**, Chirayil S and Sherry AD. Noninvasive Imaging of  $\beta$ -Cell Function in Rat by MRI using Zn<sup>2+</sup>-responsive Contrast Agent. *Annual Symposium XXVII: National Center for In Vivo Metabolism*, Dallas, TX, USA (2020).
2. Dai C, **Sharma G**, A. Dean Sherry, Craig R. Malloy, Chalermchai Khemtong, Thomas G. Gillette, Zhao V. Wang. Lactate Dehydrogenase A Governs Cardiac Hypertrophic Growth in Response to Hemodynamic Stress. *Annual Symposium XXVII: National Center for In Vivo Metabolism*, Dallas, TX, USA (2020).
3. Singh J, **Sharma G**, Khemtong C, Wen X, Hever T, Sherry AD, Malloy CR, Kovacs Z. Metabolic Studies with <sup>13</sup>C labeled 2-ketoglutarate derivatives. *Annual Symposium XXVI: National Center for In Vivo Metabolism*, Dallas, TX, USA (2019).

### 7. Professional Service

#### Peer Review Groups/Grant Study Sections:

2022-present Member, Study section on Cardiac Biology and Regulation, American Heart Association  
 2022-present Member, Scientific Peer Review Committee, American Heart Association  
 2022-present Ad hoc Member, Nutrition and Metabolism in Health and Disease, NIH/NIDDK

**Journals:**Editorial Boards

2020-present Associate Editor, *Journal of Translational Medicine (Springer Nature)*  
 2020-present Academic Editor, *PeerJ (O'Reilly and SAGE)*  
 2020-present Associate Editor, *BMC Cardiovascular Disorders (Springer Nature)*  
 2020-present Associate Editor, *Medicine (LWW journals, Wolters Kluwer Health, Inc.)*  
 2020-present Associate Editor, *BMC Research Notes (Springer Nature)*  
 2020-present Member of Editorial Advisory Board, *Heliyon (Cell Press)*  
 2020-present Associate Editor, *3biotech (Springer Nature)*  
 2020-present Topic Editor, Bioengineering (MDPI)  
 2020-present Review Editor, *Frontiers in Molecular Biosciences (Frontiers Media S.A.)*  
 2020-present Review Editor, *Frontiers in Cardiovascular Medicine (Frontiers Media S.A.)*

Reviewer Boards

2020-present International Journal of Molecular Sciences (MDPI)  
 2020-present Metabolites (MDPI)  
 2020-present Journal of Imaging (MDPI)  
 2020-present Biomolecules (MDPI)

Reviewer

*European Heart Journal, Journal of Cardiovascular Magnetic Resonance, Nutrition and Metabolism, Magnetic Resonance in Medicine (MRM), NMR in Biomedicine (NBM), Scientific reports, BMC Cancer, Medicina, Sensors, Journal of Translational Medicine, Metabolites, Medicine, Journal of Diabetes & Metabolic Disorders*

**UTSW System:**University Committees

None

Departmental Committees

2022-present Member, UTSW NMR Metabolomics Core Facility Committee, Advanced Imaging Research Center, UT Southwestern Medical Center

**8. Public Service / Media Presence:****Public Service:**

2021 Served as a *Science Fair Judge* for Dallas Independent School District (DISD) Science and Engineering Fair 2021  
 2021 Served as a *Science Fair Judge* for Uplift Education Science Fair 2021  
 2021 Served as a *Science Fair Judge* and *Best of Fair Panel* for Fort Worth Regional Science and Engineering Fair 2021  
 2021 Served as a *Science Fair Judge* for Costal Bend Regional Fair 2021  
 2021 Served as a *Science Fair Judge* for Science and Engineering Fair of Houston (SEFH) 2021  
 2021 Served as a *Lead Judge* for Medicine and Health category in Terra New York City STEM Fair  
 2021 Served as a *Science Fair Judge* for The Texas Science and Engineering Fair 2021

2022 Served as a *Science Fair Judge* and *Best of Fair Panel* for Fort Worth Regional Science and Engineering Fair 2021

### Media Presence:

2020 Interview with Anna Melidoni (Senior Editor, BMC Cardiovascular Disorders)  
Link: <https://bmccardiovascdisord.biomedcentral.com/about/editorial-board/editorial-board-member-of-the-month/gaurav-sharma>

## 9. Bibliography:

### Peer-Reviewed Original Research

1. Sharma G<sup>#</sup>, Maptue N<sup>#</sup>, Rahim M, Trigo Mijes ML, Wen W, Hever T, Funk AM, Malloy CR, Young JD, Khemtong C. Oxidation of hyperpolarized [1-<sup>13</sup>C]pyruvate in isolated rat kidneys. *NMR in Biomedicine*. 2022. ahead of print
2. Dai C, Zhang Q, Shen L, Sharma G, Jiang H, Wang Z, Shen J. Quercetin Attenuates Quinocetone-Induced Cell Apoptosis In Vitro by Activating the P38/Nrf2/HO-1 Pathway and Inhibiting the ROS/Mitochondrial Apoptotic Pathway. *Antioxidants*. 2022; 11(8):1498. <https://doi.org/10.3390/antiox11081498>
3. Thapa B, Suh EH, Khalighinejad P, Parrott D, Sharma G, Chirayil S, Sherry AD. Imaging  $\beta$ -cell function using a zinc-responsive MRI contrast agent may identify first responder islets. *Frontiers in Endocrinology*. 2021. PMID: 35173681 DOI: 10.3389/fendo.2021.809867
4. Sharma G, Wen W, Meptue NR Hever T, Malloy CR, Sherry AD, Khemtong C. Co-Polarized [1-<sup>13</sup>C]Pyruvate and [1,3-<sup>13</sup>C<sub>2</sub>]Acetoacetate Provide a Simultaneous View of Cytosolic and Mitochondrial Redox in a Single Experiment. *ACS Sensors*. 2021. PMID: 34761912 DOI: 10.1021/acssensors.1c01225 \*Featured on Journal's cover
5. Singh J, Suh EH, Sharma G, Chen J, Hackett E, Wen X, Sherry AD, Khemtong C, Malloy CR; Park JM, Kovacs Z. <sup>13</sup>C-labeled diethyl ketoglutarate derivatives as hyperpolarized probes of 2-ketoglutarate dehydrogenase activity. *Analysis and Sensing*, 2021. DOI: [doi.org/10.1002/anse.202100021](https://doi.org/10.1002/anse.202100021)
6. Li Q, Li C, Elnwasany A, Sharma G, An YA, Zhang G, Elhelaly WM, Lin J, Gong Y, Chen G, Wang M, Zhao S, Dai C, Smart CD, Liu J, Luo X, Deng Y, Tan L, Lv SJ, Davidson SM, Locasale JW, Lorenzi PL, Malloy CR, Gillette TG, Vander Heiden MG, Scherer PE, Szweda LI, Fu G, Wang ZV. PKM1 Exerts Critical Roles in Cardiac Remodeling Under Pressure Overload in the Heart. *Circulation*. 2021. Aug 31;144(9):712-727. doi: 10.1161/CIRCULATIONAHA.121.054885. Epub 2021 Jun 9. PMID: 34102853; PMCID: PMC8405569.
7. Dai C, Xiao X, Yuan Y, Sharma G, Tang SS. A comprehensive toxicological assessment of fulvic acid. *Evid Based Complement Alternat Med*. 2020; 2020:8899244. PMID: 33381216 DOI: <https://doi.org/10.1155/2020/8899244>.
8. Dai C, Li Q, Herman I. May, Sharma G, Zhang G, Deng Y, Sherry AD, Malloy CR, Khemtong C, Gillette TG, Scadden DT, Wang ZV. Lactate dehydrogenase A governs cardiac hypertrophic growth in response to hemodynamic stress. *Cell Reports*. 2020. PMID: 32877669. DOI: <https://doi.org/10.1016/j.celrep.2020.108087>
9. Dai C, Lui Q, Li D, Sharma G, Tang S, Xiaog J, Xiao X. Molecular insights of copper sulfate exposure-induced nephrotoxicity: involvement of oxidative and endoplasmic reticulum stress pathways. *Biomolecules*. 2020. PubMed PMID: 32650488 DOI: <https://doi.org/10.3390/biom10071010>
10. Cardoso AC, Savla JJ, Lam NT, Nakada Y, Pereira AHM, Elnwasany A, Menendez-Montes I, Ensley E, Petric UB, Sharma G, Sherry AD, Malloy CR, Khemtong C, Kinter M, Ten WLW,

- Anene-George CG, Abdisalaam S, Asaithamby A, Xing C, Kanchwala M, Vale G, Eckert KM, Mitsche M, McDonald JG, Hill J, Szweida IL, Sadek AS. Mitochondrial Substrate Utilization Regulates Cardiomyocyte Cell Cycle. *Nature Metabolism*. 2020. <https://www.nature.com/articles/s42255-020-0169-x> PubMed PMID: 32617517
11. Sharma G, Wu CY, Wynn RM, Gui W, Malloy CR, Sherry AD, Chuang DT, Khemtong C. Real-time hyperpolarized <sup>13</sup>C magnetic resonance detects increased pyruvate oxidation in PDK2/4 double knockout livers. *Scientific Reports*. 2019. <https://doi.org/10.1038/s41598-019-52952-6>
  12. Chen W, Sharma G<sup>#</sup>, Jiang W, Meptue NR, Malloy CR, Sherry AD, Khemtong C. Metabolism of hyperpolarized <sup>13</sup>C-acetoacetate to β-hydroxybutyrate detects real-time mitochondrial redox state and dysfunction in heart tissue. *NMR in Biomedicine*. 2019. <https://doi.org/10.1002/nbm.4091> PubMed PMID: 30968985 **#Joint first author**
  13. Maptue NR, Jiang W, Harrison C, Funk AM, Sharma G, Malloy CR, et al. Esterase-catalyzed production of hyperpolarized <sup>13</sup>C-enriched carbon dioxide in tissues for measuring pH. *ACS Sensors*. 2018. Nov 6;acsensors.8b01097. <https://pubs.acs.org/doi/10.1021/acssensors.8b01097> PubMed PMID: 30398335
  14. Makarewich CA, Baskin KK, Munir AZ, Bezprozvannaya S, Sharma G, Khemtong C, Shah AM, McAnally JR, Malloy CR, Szweida LI, Bassel-Duby R, Olson EN. MOXI Is a Mitochondrial Micropeptide That Enhances Fatty Acid β-Oxidation. *Cell Reports*. 2018; 23(13):3701-9. <https://doi.org/10.1016/j.celrep.2018.05.058> PubMed PMID: 29949755
  15. Wu CY, Satapati S, Gui W, Wynn RM, Sharma G, Lou M, Qi X, Burgess SC, Malloy C, Khemtong C, Sherry AD, Chuang D, Merritt ME. A Novel Inhibitor of Pyruvate Dehydrogenase Kinase Stimulates Myocardial Carbohydrate Oxidation in Diet-Induced Obesity. *J Biol Chem*. 2018. Epub 2018/05/10. <https://doi.org/10.1074/jbc.RA118.002838> PubMed PMID: 29739849.
  16. Wu CY, Tso SC, Chuang JL, Gui WJ, Lou M, Sharma G, Khemtong C, Qi X, Wynn RM, Chuang DT. Targeting hepatic pyruvate dehydrogenase kinases restores insulin signaling and mitigates ChREBP-mediated lipogenesis in diet-induced obese mice. *Mol Metab*. 2018. Epub 2018/04/16. <https://doi.org/10.1016/j.molmet.2018.03.014>. PubMed PMID: 29656110.
  17. Jaiswal D, Rai PK, Mehta S, Chatterji S, Shukla S, Rai DK, Sharma G, Sharma B, Khair S, Watal G. Role of Moringa oleifera in regulation of diabetes-induced oxidative stress. *Asian Pac J Trop Med*. 2013;6(6):426-32. Epub 2013/05/29. [https://doi.org/10.1016/S1995-7645\(13\)60068-1](https://doi.org/10.1016/S1995-7645(13)60068-1). PubMed PMID: 23711700.

#### ***In Press: Peer-Reviewed Original Research In Press***

1. Jin E, Malloy CR, Sharma G, Finn E, Fuller K, Reyes YG, Cree-Green M. Glycerol Incorporation into Glutathione in Human Liver. *Nature Metabolism* 2022.

#### ***Peer-Reviewed Reviews, Practice Guidelines, Standards, and Consensus Statements***

1. Dai C, Wang Y, Sharma G, Shen J, Velkov T, Xiao X. Polymyxins-curcumin combination antimicrobial therapy: safety implications and efficacy for infection treatment. *Antioxidants*. 2020. DOI: <https://doi.org/10.3390/antiox9060506> PubMed PMID: 32526966
2. Singh S, Suh EH, Sharma G, Khemtong C, Sherry AD, Kovacs Z. Probing carbohydrate metabolism using hyperpolarized <sup>13</sup>C-labeled molecules. *NMR in Biomedicine*. 2018. <https://doi.org/10.1002/nbm.4018> PubMed PMID: 30474153
3. Watal G, Watal A, Rai PK, Rai DK, Sharma G, Sharma B. Biomedical applications of nano-antioxidant. *Methods Mol Biol*. 2013;1028:147-51. Epub 2013/06/07. [https://doi.org/10.1007/978-1-62703-475-3\\_9](https://doi.org/10.1007/978-1-62703-475-3_9). PubMed PMID: 23740118.

#### ***Books***



1. **Sharma G**, Joshi B. Analysis of differentially expressed proteins and sero-reactivity of Mycobacterium tuberculosis clinical isolates in comparison to lab strain H37Rv. **VDM Verlag Lambert**, 2012.

*Chapters*

1. Shankar P, Jagtap J, **Sharma G**, Sharma GP, Singh J, Parashar M, Kumar G, Mittal S, Sharma MK, Jadhav K. and Parashar D. A revolutionary breakthrough of bionanomaterials in tissue engineering and regenerative medicine. *Bionanotechnology: Emerging Applications of Bionanomaterials. Elsevier Science. 2022.*
2. **Sharma G**, Pandey S, Ghatak S, Watal G, Rai PK. Potential of Spectroscopic Techniques in the Characterization of “Green Nanomaterials”. *Nanomaterials in Plants, Algae, and Microorganisms. Elsevier Inc. 2018. p. 59-77.*  
<https://www.sciencedirect.com/science/article/pii/B9780128114872000037>
3. **Sharma G**, Ghatak S, Rai PK. Applications and potential of NMR spectroscopy in plant metabolomics. *Technological Advancements in Plant Sciences. Nova Science Publisher, Inc. 2016 p. 07-16.* <https://www.worldcat.org/title/technological-advancements-in-plant-sciences/oclc/1030364130>

*Commentaries, Editorials, and Letters*

None