

Dr. Varun Kumar, Ph.D.
Assistant Professor
Department of Home Science
Ramesh Jha Mahila College, Saharsa
B.N. Mandal University, Madhepura, Bihar, India

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Academic Qualification

Period	Education	University/ Institute	Specialization
2015-2020	Ph.D.	CSIR-CFTRI, (AcSIR), Mysore, Karnataka Under Collaboration of AIIMS, New Delhi	Biological Science
2014-2015	DMC	Sant Longwal Institute of Engineering and Technology, Punjab	Food Engineering and Technology
2011-2013	M.Sc.	Pondicherry Central University, Pondicherry	Food Science and Nutrition
2008-2011	B.Sc.	University of Rajasthan, Jaipur	Botany, Zoology, Chemistry
2009-2010	Diploma	University of Rajasthan, Jaipur	Biotechnology
2008-2009	Certificate	University of Rajasthan, Jaipur	Biotechnology

Research Interest: Currently, We are working on “Development and Identification of therapeutic bioactive peptides/protein from food sources for modulation of hypercholesteremia/Hyperlipidemia”. The overload of cellular and circulating cholesterol is detrimental and contributes to several life-threatening diseases, including atherosclerosis and coronary artery diseases. Globally, roughly 17 million deaths a year accounts due of cardiovascular disease, roughly one-third of the total death.

Research Expert/Technical Skills:

Protein Biochemistry: Extraction, Isolation, Proteolytic digestion, and Purification protein from the different food sources. In-Silico design, Synthesis and Purification of bioactive peptide. Also expert in SDS-PAGE and native PAGE analyses, Gel-filtration, and hydrophobic interaction chromatographic techniques and biochemical analysis for protein-peptide Interaction.

Cell Culture, Molecular Biology Techniques, and Animal handling: Mammalian Cell culture, Cell based assays, maintenance of Cell lines, PCR, RT-PCR, RNA-Extraction, *in vitro* and *in vivo* protein-DNA interaction (EMSA, ChIP), Protein-Protein interaction. Rats handling and related expertise such as dissection of different organs, blood collection, injection, tissue harvesting to study hypercholesterolemia.

Biochemical & Immunological Techniques: Immuno-precipitation, Western blot, ELISA, Fluorescence Microscope, Enzyme activity assays and other biochemical analysis related to cholesterol Homeostasis.

Chromatographic & Bioinformatics: RP-HPLC, LC-MS/MS, Homology (Blast), Primer designing, Peptide Design, Molecular docking.

Award and Honour

Aug.2019	International Peace Research Award (Biochem.& Molecular Biology)	World Research Council & United Medical Council, USA With Association of IJRULA, India.
Dec.2019	Best Scientific Poster Award 7 th Bio processing Conference India	DRDO-DFRL, AFSTI, CSIR- CFTRI at CSIR-CFTRI Campus Mysore, Karnataka
Dec.2018	Best Scientific Poster 8 th International Food Convention (IFCON)	AFSTI, CSIR-CFTRI, at CSIR- CFTRI Mysore, Karnataka
Jun.2015	UGC-NET Junior Research Fellowship	University Grant Commission New Delhi, India
Dec.2014	MHRD-TQIP, Junior Research Fellowship	Ministry of Human Resource and Development, New Delhi
Dec.2013	UGC-NET Assistant Professorship	University Grant Commission New Delhi, India
Jun.2013	UGC-NET Assistant Professorship	University Grant Commission New Delhi, India

Scientific Memberships

Life Member: American Peptide Society, Columbus, USA

Life Member: World Research Council, USA

Life Member: The European Peptide Society, Europe

Life Member: European Federation of Biotechnology, Europe

Member: Society of Biological Chemists, Mysore, Karnataka, India

Member: Association of Food Scientists and Technologists (INDIA) (AFSTI), Mysore

Member: National Science congress, Kolkata, India

Life Member: Nutritional Society of India, NIN, Hyderabad, India

Reviewer for International Journal

1. Food Biotechnology, Taylor & Francis, Florida, United States
 2. Functional Food, Elsevier Inc. Philadelphia, PA 19103, United States
 3. Food Chemistry, Elsevier Inc. Philadelphia, PA 19103, United States
 4. International Journal of Peptide Research and Therapeutics, Springer nature, Singapore,
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Academic Appointment/ Administrative Experience

External Examiner: University of Agriculture Science (USA), Darward, Karnataka

External Examiner: Veer Kunwar Singh University, Aara

Coordinator: Internal Quality Assurance Cell (IQAC),RJMC, Saharsa

Coordinator: Undergraduate course, RJMC, Saharsa

Professional Training

2021: Faculty Induction Programme, University of Mysore, Mysuru, Karnataka

2017: In hand Training on Liquid chromatography–Mass spectrometry (LC-MS/MS),
NCBS-TIFR, Bangalore, Karnataka, India

2017: In-House training for Animal Experiment: Handling, Treatment/Feeding and
Dissection " Animal House Facility, CSIR-CFTRI, Mysore, Karnataka, India

Research Experience

2015 –2019: **Senior Research Fellow**
Department of Protein Chemistry and Technology
CSIR-Central Food Technological Research Institute
Mysore, Karnataka, India

2014 – 2015: **Research Fellow**
Department of Food Engineering & Technology
Sant Longowal Institute of Engineering and Technology, Sangrur, Punjab,
India

Research Publications

Kumar, V., Sharma, P., Bairagya, H.R., Sharma, S., Singh, T.P. and Tiku, P.K., 2019. Inhibition of human 3-hydroxy-3-methylglutaryl CoA reductase by peptides leading to cholesterol homeostasis through SREBP2 pathway in HepG2 cells. *Biochimica et Biophysica Acta (BBA)-Proteins and Proteomics*, 1867(6), pp.604-615. DOI: [10.1016/j.bbapap.2019.04.002](https://doi.org/10.1016/j.bbapap.2019.04.002)

Kumar, V., and Tiku, P.K., 2021. A Cholesterol Homeostasis by Bioactive Peptide Fraction from Pigeon Pea By-Product: An In-Vitro Study. *International Journal of Peptide Research and Therapeutics*, 27(2), pp.977-985. <https://doi.org/10.1007/s10989-020-10143-2>

Kumar, V., Kurup, L.V. and Tiku, P.K., 2020. The modulatory effect of cholesterol synthesis by *Oryza sativa* derived bioactive peptide fractions: an in vitro investigation. *International Journal of Peptide Research and Therapeutics*, pp.1-7. <https://doi.org/10.1007/s10989-020-10079-7>

Kumar, V. and Tiku, P.K., 2021. A Cholesterol Homeostasis by Bioactive Peptide Fraction from Pigeon Pea By-Product: An In-Vitro Study. *International Journal of Peptide Research and Therapeutics*, 27(2), pp.977-985. <https://doi.org/10.1007/s10989-020-10143-2>

Kumar, V., Haripriya, S., 2017. Rational approach to sequential optimization of antioxidative whey protein hydrolysate production. *International Journal on Nutraceuticals, Functional Foods and Novel Foods*, 16(1),pp.83-89. <https://doi.org/10.17470/NF-016-1013-2> .

Nayik, G.A., Majid, I. and **Kumar, V.**, 2015. Developments in edible films and coatings for the extension of shelf life of fresh fruits. *American journal of nutrition and food science*, 2(1), pp.16-20. DOI:[10.12966/ajnfs](https://doi.org/10.12966/ajnfs).

Kumar, V., Muthu, S.P. and Tiku, P.K., 2021., Hypocholesterolemic Effect of Potent Peptide and Bioactive Fraction from Pigeon pea by-products in Wistar Rats *International Journal of Peptide Research and Therapeutics*, 28(2), pp.977-985.

<https://doi.org/10.1007/s10989-021-10261-5>

Kumar, V., Valalbha, S, Sindhe,V.S., and Tiku, P.K., 2021., Angiotensin-converting enzyme inhibition and AT1-receptor antagonism evenly ameliorates cardiometabolic and nephrological markers. *Biosci. Biotechnol. Biochem*, 30 (4), pp.210454-10.

Kumar, V., Nayik, G.A., and Muzafer, K., 2015. South Africa processing capabilities: Getaway to Africa. *Ingredients of south Indian Mumbai* ,16-30, pp 52-54

Kumar, V., Majid, I. and Nayik, G.A., 2014. Fortification increasing essential micronutrients in food. *Food and Beverage, Ingredients of South India Mumbai*, 07(03), pp.16-32.

Kumar, V., Majid, I. and Nayik, G.A., 2014. Food colour often associated with flavour *Ingredients of South India, Mumbai*, 08(04),pp. 25-28.

Kumar, V., Majid, I. and Nayik, G.A., 2014. Bakery industry in India: innovation, trends and challenges: *food and Beverage, Ingredients of South India Mumbai*, 07(01), pp.19- 23.

Kumar, V., and Tiku, P.K., 2021. A high cholesterol risk: Mitochondria dysfunction and Therapeutic solution (Communicated)

Kumar, V., Vallabha .S.V., and Tiku, P.K., 2021. Regulation of Hypercholesterolemia and Hypertension by Food- derived Bioactive Peptides (to be communicated)

Kumar, V.,, and Nayik, G.A., 2021.Effect of Fermentation Processing on the Structural and Functional Properties of Bioactive Compounds. *Trend in Food Science and Technology* (under review), IF-11.077

International Published Book Chapter

Varun Kumar, Amarjeet Kumar, Naik Gulzar (2020) The drumstick antioxidant. In: Gulzar Ahanmad and Amir Gull (ed) Antioxidant in Vegetable and nuts. Springer nature, Singapore, ISBN ISBN: 978-981-15-7469-6
DOI: [10.1007/978-981-15-7470-2](https://doi.org/10.1007/978-981-15-7470-2)

Amarjeet Kumar, **Varun Kumar**, Naik Gulzar (2020) Tomato antioxidant. In: Gulzar Ahanmad and Amir Gull (ed) Antioxidant in Vegetable and nuts. Springer nature, Singapore, ISBN ISBN: 978-981-15-7469-6
DOI: [10.1007/978-981-15-7470-2](https://doi.org/10.1007/978-981-15-7470-2)

Varun Kumar, Balaji Kanawate, (2021) Enzymatic inhibitors (Protease inhibitors, Amylase inhibitors, Cholinesterase inhibitors) In: Gulzar Ahanmad and Jassi Kaur (ed) Handbook of Plant & Animal Toxins in Food: Occurrence, Toxicity & Prevention." Published by Taylor&Francis, CRC press. Florida, United States ISSN 978-1-032-01395-4.

Varun Kumar, Amarjeet Kumar, (2021) Betalain. In: Gulzar Ahanmad and Jassi Kaur (ed) "Nutraceuticals and Health Care and Health Care" Published by Elsevier Inc. Philadelphia, PA 19103, United States, ISSN- 608335.

Varun Kumar, Amarjeet Kumar, (2021) Oral Delivery of Natural Drugs Entrapped Delivery Systems for Treatment of Cancer. In Anindita Behera (ed) "Nano-Delivery of Anticancer Drugs of Natural Origin", Springer nature, Singapore ISSN- 878-1-033-01396-5.

Varun Kumar, Amarjeet Kumar, (2021) Extraction and Analysis of essential Oils: Laboratory Extraction method, Industrial extraction method, Chemical Analysis. In Gulzar Ahamad Naik (ed) "Essential Oils: Extraction, Characterization & Applications" Published by Academic Press, Elsevier Inc. Philadelphia, PA, United States, ISSN- 678542.

Varun Kumar, Dipendra Rajoriya, (2021) Inovative apple processing Technology. In Rafiya., M, Naik., G.A, and Malik., A.R (ed) "Apples: Preharvest and Postharvest Technology" Published by Taylor & Francis, CRC press. Florida, United States ISSN 878-1-032-01395-3.

International Proceedings Conference

Varun Kumar and Purnima Kaul Tiku, Regulation of 3-hydroxy-3-methylglutaryl CoA reductase expression and Low- Density Lipoprotein Receptor by potent peptide and Active peptide fractions in the high fat- Diet Wistar Rats. 7th Bioprocessing India Conference (BPI) 2019, Organized by CSIR-CFTRI, AFSTI, and DRDO-DFRL, December 14-16, 2019 at CSIR-CFTRI, Mysore

Varun Kumar, Lakshmy V Kurup and Purnima Kaul Tiku, Modulatory effect of cholesterol synthesis by rice bran (*Oryza sativa*) bioactive peptides fractions, 7th Bioprocessing India Conference (BPI) 2019, Organized by CSIR-CFTRI, AFSTI, and DRDO-DFRL, December 14-16, 2019 at CSIR-CFTRI, Mysore

Varun Kumar and Purnima Kaul Tiku, Peptide/s from Pigeon Pea By-Products inhibit 3-Hydroxy-3-Methylglutaryl CoA Reductase via Sterol Regulatory Element-Binding Protein-2 Dependent Mechanism in HepG2 Cells. 8th International Food Convention (IFCON) 2018, Organized by AFSTI, December 12-15, at CSIR-CFTRI, Mysore.

Varun Kumar and Purnima Kaul Tiku, Peptide/s- Human 3-hydroxy 3-methylglutaryl -CoA reductase interactions: Cholesterol homeostasis in HepG2 cells. IUFoST 2018 World Congress of Food Science and Technology, October 23-27, 2018, Mumbai, India.

Varun Kumar and Purnima Kaul Tiku, Modulation of hypercholesterolemia by Food –derived bioactive peptide/s at Indo-Finnish international workshop on nutria concept: innovative food concept and Technologies for global nutrition and business, May 15-16, 2018, CSIR-CFTRI, Mysore

Varun Kumar, Molecular mechanistic platform of food-derived biomolecules for glucose homeostasis, National Seminar, BIOMAP, BIDAR-03. Karnataka.

Varun Kumar and Purnima Kaul Tiku, Pigeon pea waste milling by-product: Preparation of protein isolate and exploring its therapeutics potentials. The 85th Annual Meeting of Society of Biological Chemists (India) Conference at November 2016, CSIR-CFTRI, Mysore.

Workshop/ Training /Participated Conference

Participated and attended “HASTHAG” Holistic Approaches for Start-ups, Human Resource Training for Agriculture and Food Industry Gemination 8th International Food Convention (IFCON) 2018, Organized by AFSTI, December 12-15, CSIR-CFTRI, Mysore, Karnataka, India.

Attended hand –on- workshop on LC-MS/MS organized by National Centre for Biological sciences (NCBS-TIFR) from January 4-6, 2017, Bangalore, Karnataka, India

Attended the “In –House training for Animal Experimenters” organized by Animal House Facility, CSIR-CFTRI, Mysore, Karnataka, India

Attended the National Conference on Agro- Food Processing Technologies conducted by the Association of Food Scientists and Technologists (India), Pondicherry Chapter in 2012

Attended the National Seminar on Functional Foods and Health conducted by the Association of Food Scientists and Technologists (India), Pondicherry Chapter in 2012, Pondicherry.

Two months Medicine Industrial Training from Dec 2009 to Nov 2009 at Denizen pharmaceuticals Pvt Ltd. Tikry Border, New Delhi

One month Hospital Training on "Haematology" from December 2008 to January 2009 at Sanjeevni Hospital, Jaipur, Rajasthan.

One month training on antimicrobial tests from November 2010 at Metro city Diagnostic Centre, Jaipur, Rajasthan.

Personal Information

Dr. Varun Kumar, Ph.D.
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Date of Birth: July 15,1988
Nationality: Indian
Sex: Male
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Referees

Supervisor Dr. Purnima Kaul, Senior Principle Scientist,
Department of protein Chemistry and Technology
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Research Collaborator : Dr. Sachin Elagar, Senior Scientist,
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Declaration

I hereby declare that all the facts and information given above are true to the best of my knowledge and belief.

Varun Kumar