




**INSTITUTE OF HOME ECONOMICS**  
**UNIVERSITY OF DELHI**



<b>Name</b>	Dr Bhupender Kumar	<b>Photograph</b>
<b>Designation</b>	Assistant Professor (Biochemistry)	
<b>E-mail</b>	<a href="mailto:bhupender19@ihe.du.ac.in">bhupender19@ihe.du.ac.in</a> , <a href="mailto:bhupender19@gmail.com">bhupender19@gmail.com</a>	
<b>Educational Qualifications:</b> MSc Biotechnology (2008) Jamia Hamdard, Ph.D Life Sciences (2015) JNU (Cancer genetics and Cancer metabolism), MA Environmental Education (2018) Kurukshetra University		
<b>Teaching experience:</b> 9 Years		
<b>Subjects/Papers Taught</b> BSc (H) Biochemistry, Semester VI – Genetic Engineering and Biotechnology (BCH C-13) BSc (H) Biochemistry, Semester VI – Plant Biochemistry (BCH DSE-5) BSc (H) Biochemistry, Semester V – Gene Expression and Regulation (BCH C-12) BSc (H) Biochemistry, Semester V – Concepts in Genetics (BCH C-11) BSc (H) Biochemistry, Semester IV – Gene Organisation, Replication and Repair (BCH C-9) BSc (H) Biochemistry, Semester IV – Bioinformatics (BCH SEC-4) BSc (H) Biochemistry, Semester III – Metabolism of Carbohydrate and Lipids (BCH C-5) BSc (H) Biochemistry, Semester I – Molecules of Life (BCH C-1) BSc (H) Food Technology, Semester I – Biomolecules (BCH GE-1) BSc (H) Microbiology, Semester I – Biomolecules (BCH GE-1)  MSc Food and Nutrition, Semester I – Advanced Nutritional Biochemistry and Techniques-I (FNCC 102) MSc Food and Nutrition, Semester II – Advanced Nutritional Biochemistry and Techniques-II (FNCC 208)  BSc (P) Home Science, Semester V – Nutritional Biochemistry (DSE) BSc (H) Home Science, Semester V – Nutritional Biochemistry (DSE)  BSc (P) Home Science, Semester I (NEP) – Basic IT Tools (SEC)		
<b>Awards received</b> <ul style="list-style-type: none"><li>• Cleared CSIR-NET for JRF and lecturership, Dec. 2007 &amp; June 2008 examination under life sciences scheme.</li><li>• Cleared DBT-JRF 2008 in Category-A</li></ul>		
<b>Research Interest/Specialization</b> Cancer biologist and human geneticist working towards establishment of precision medicine. Human Genetics, Cancer Genetics, Cancer Metabolism, Diabetes, NAFLD, NGS (Next Generation)		

Sequencing), Data analysis using R programming

**ORCID No.**

<https://orcid.org/0000-0003-3887-5040>

**Scopus ID**

<https://www.scopus.com/authid/detail.uri?authorId=57217717656>

**Google Scholar ID**

[https://scholar.google.co.in/citations?user=UqyH\\_KkAAAAJ&hl=en](https://scholar.google.co.in/citations?user=UqyH_KkAAAAJ&hl=en)

**LinkedIn ID**

<https://www.linkedin.com/in/bhupender-kumar-a608416a/>

**Research Projects**

Title	Funding agency/organization	Duration of Project

**Research papers since 2010 (APA format)**

1. Meenakshi Vachher\*, Sandeep Yadav\*, Aayushi Rastogi\*, Shivani Tihara, **Bhupender Kumar**, Taruna Arora and Archana Burman. Consumption of natural products and Ayurvedic decoctions “kadha” as immunity-boosting measures during the spread of COVID-19 in Delhi (Volume 7, Issue 3, pages, July – September 2022 – Journal of Drug Research in Ayurvedic Science) ISSN 2581-8295
2. Meenakshi Vachher, Savita Bansal, **Bhupender Kumar**, Sandeep Yadav and Archana Burman. Deciphering the role of aberrant DNA methylation in NAFLD and NASH (Volume 8, Issue 10, pages, October 2022 – **Heliyon Cell Press**) ISSN 2405-8440 Online **IF- 3.77**
3. Meenakshi Vachher, Savita Bansal, **Bhupender Kumar**, Sandeep Yadav, Taruna Arora, Nalini Moza Wali and Archana Burman. Contribution of organokines in the development of NAFLD/NASH associated hepatocellular carcinoma. (Volume 123, Issue 10, pages 1553-1584, **July 2022, Journal of Cellular Biochemistry**) ISSN 1097-4644 Online **IF- 4.48**
4. Zafar Iqbal Bhat, Afreen Naseem, **Bhupender Kumar**, Ponnusamy Kalaiarasan, R. Tiwari, GD Sharma and M. Moshahid Alam Rizvi. Association of PARK-2 non-synonyms polymorphisms and their *in-silico* validation among North Indian colorectal patients. (Volume 53, Issue 3, pages 674–682, **2022, Journal of Gastrointestinal cancer**) ISSN 1941-6628
5. Mohammad Askandar Iqbal, Shumaila Siddiqui, Asad Ur Rehman, Farid Ahmad Siddiqui, Prithvi Singh, **Bhupender Kumar** and Daman Saluja. Multiomics integrative analysis reveals antagonistic roles of CBX2 and CBX7 in metabolic reprogramming of breast cancer. (Volume 15, Issue 5, **May 2021**, Pages 1450-1465. **Molecular Oncology (FEBS PRESS)** ISSN 1878-0261 **IF- 7.45**
6. Meenakshi Vachher, Kriti Arora, Archana Burman and **Bhupender Kumar**. NAMPT, GRN and SERPINE1 signature as predictor of disease progression and survival in gliomas. (Volume

121, Issue 4, **April 2020**, Pages 3010-3023, **Journal of Cellular Biochemistry**) ISSN 1097-4644 **Online IF-4.48 (Corresponding author)**

7. Afreen Naseem, Zafar Iqbal Bhat, Ponnusamy Kalaiarasan, **Bhupender Kumar**, Zubair Hafez, Khushnuma wahabi, Raj Tiwari, Gauri Gandhi and M. Moshahid Alam Rizvi. Assessment of Epigenetic alterations and in-silico analysis of Mutation affecting PTEN expression among Indian cervical cancer patients (Volume 120, Issue 9, Pages 15851-15866, **September 2019**, **Journal of Cellular Biochemistry**) ISSN 1097-4644 **Online IF – 4.48**
8. Zafar Iqbal Bhat\*, **Bhupender Kumar\***, Savita Bansal, Afreen Naseem, Raj Ranjan Tiwari, G.D Sharma and M. Moshahid Alam Rizvi. Association of PARK2 promoter polymorphisms and methylation with colorectal cancer in North Indian population.(Volume 682, Pages 25–32,**January 2019**,**GENE**) ISSN **0378-1119 IF 3.91 (Joint first author)**
9. Taruna Kumari and **Bhupender Kumar**. High-mobility group box 1 protein (HMGB1) gene polymorphisms and Cancer susceptibility: A comprehensive meta-analysis (Volume 483, Pages 170–182,**August 2018**,**ClinicaChimica Acta**) ISSN 0009-8981 **Print IF–6.3 (Corresponding author)**
10. Taruna Kumari, Meenakshi Vachher, Savita Bansal, Rameshwar NK Bamezai and **Bhupender Kumar**. Meta-analysis of mitochondrial T16189C polymorphism for cancer and Type 2 diabetes risk. (Volume 482, Pages 136-143, **July 2018**,**ClinicaChimica Acta**) ISSN 0009-8981 **Print IF-6.3 (Corresponding author)**
11. **Bhupender Kumar**. Resveratrol inhibits expression of cancer specific PPP enzyme TKTL1. (Vol. 11, issue 6, 1-4, **June 2018**, **AJPCR**) ISSN 0974-2441 Print. (UGC-CARE at the time of publication)
12. **Bhupender Kumar**. Fisetin synergizes with gemcitabine and inhibits viability of MIA PaCa-2 pancreatic cancer cells. (1 (1), **March 2018**, **Research Reports**) ISSN 2471-5689(online) Peer reviewed
13. **Bhupender Kumar\***, Zafar Iqbal Bhat\*, Savita Bansal, Sunil Saini, Afreen Naseem, Khushnuma wahabi, Archana Burman, Geeta Trilok-Kumar, Sundeep Singh Saluja and M. Moshahid Alam Rizvi. Association of mitochondrial copy number variation and T16189C polymorphism with colorectal cancer in North Indian population. (Volume: 39 issue: 11, **November 2017**, **Tumor Biology**) ISSN: 1010-4283 (Print) **IF-3.65 (Joint first author)**
14. Afreen Naseem, Zafar Iqbal Bhat, Ponnusamy Kalaiarasan, **Bhupender Kumar**, Gauri Gandhi and M. Moshahid Alam Rizvi. Genetic and epigenetic alterations affecting PARK-2 expression in cervical neoplasm among North Indian patients. (Volume: 39 issue: 6, **June 2017**, **Tumor Biology**) ISSN: 1010-4283 (Print) **IF-3.65**
15. **Bhupender Kumar**, Mohd Askandar Iqbal, Rajnish Kumar Singh and Rameshwar NK Bamezai. Resveratrol inhibits TIGAR to promote ROS induced apoptosis and autophagy. (Volume 118, Pages 26-35,**November 2015**, **Biochimie**) ISSN 0300-9084 **IF– 4.37 (first author)**
16. **Bhupender Kumar** and Rameshwar NK Bamezai. Moderate DNA damage promotes metabolic flux into PPP via PKM2 Y-105 phosphorylation: a feature that favours cancer cells. (Volume 42, Issue 8, pages 1317–1321, **August 2015**, **Molecular Biology Reports**) ISSN 1573-4978 **IF-2.74 (first author)**
17. Ponnusamy Kalaiarasan, **Bhupender Kumar**, VibhorGupta, Naidu Subarao and Rameshwar

Bamezai (July 2014) In Silico Screening, Genotyping, Molecular Dynamics Simulation and Activity Studies of SNPs in Pyruvate Kinase M2. (Volume10, Issue 3, **March 2015, PLOS ONE**) ISSN · 1932-6203**IF-3.75**

18. Siddharth Manvati, Kailash Mangalhar, Ponnusamy Kalaiarasan, Shilpi Chattopadhyay, **Bhupender Kumar**, Gaurav Agarwal, Nillu Srivastava, Rameshwar NK Bamezai. MiR-101 Induces Senescence and Prevents Apoptosis in the Background of DNA Damage in MCF7 Cells (Volume 9 | Issue 10 | e111177, **October 2014, PLOS ONE**) ISSN · 1932-6203 **IF-3.75**
19. Archana Pandita, **Bhupender Kumar**, Siddharth Manvati, Samantha Vaishnavi, Shashank K Singh and Rameshwar NK Bamezai. Synergistic combination of gemcitabine and dietary molecule(s) induces apoptosis in pancreatic cancer cells and down regulates PKM2 expression (Volume 9 | Issue 9 | e107154, **September 2014, PLOS ONE**) ISSN · 1932-6203 **IF-3.75**
20. Mohd Askandar Iqbal, Farid Ahmad Siddiqui, Noor Chaman, Vibhor Gupta, **Bhupender Kumar**, Prakasam Gopinath and Rameshwar N.K. Bamezai. Missense mutations in pyruvate kinase M2 promote cancer metabolism, oxidative endurance, anchorage independence and tumor growth in a dominant negative manner (Volume 289, Issue 12, pages 8098-8105, **2014, Journal of Biological Chemistry**). Online ISSN 1083-351X **IF – 5.48**
21. Rupali Chopra, Shafat Ali, Amit Srivastava, Shweta Aggarwal, **Bhupender Kumar**, Siddharth Manvati, Ponnusamy Kalaiarasan, Mamta Jena, and Rameshwar Bamezai. (2013) 'Mapping of PARK2 and PACRG Overlapping Regulatory Region Reveals LD Structure and Functional Variants in Association with Leprosy in Unrelated Indian Population Groups'. (10.1371/journal.pgen.1003578, **Jul 2013 | PLOS Genetics**) ISSN 1553-7390 **IF–6.02**
22. Mohd Askandar Iqbal, Farid Ahmad Siddiqui, Vibhor Gupta, P Gopinath, Shilpi Chattopadhyay, **Bhupender Kumar**, Siddharth Manvati, Noor Chaman, and Rameshwer NK Bamezai.(2013) Insulin enhances metabolic capacities of cancer cells by dual regulation of glycolytic enzyme pyruvate kinase M2. (12:72 **July 2013, Molecular Cancer**) ISSN: 1476-4598 **IF-41**

#### Books published/edited

#### Book chapters published/edited

1. Gupta, V., Iqbal, MA., **Kumar**, B and Bamezai, RNK. (2015) **Tumor cell metabolism-Pathways, Regulation and Biology. Chapter 6**Pyruvate Kinase M2: A Metabolic Tuner. <http://www.springer.com/biomed/cancer/book/978-3-7091-1823-8> **ISBN 978-3-7091-1823-8**
2. Gopinath, P., Iqbal, MA., Gupta, V., **Kumar**, B and Bamezai, RNK. **Encyclopedia of Signaling Molecules, 2nd Edition (2017) – Chapter PKM2.** [https://link.springer.com/referenceworkentry/10.1007%2F978-3-319-67199-4\\_101893](https://link.springer.com/referenceworkentry/10.1007%2F978-3-319-67199-4_101893)**ISBN 978-1-4939-6799-5 (Print)**

### Association with Professional Societies

- Indian Society of Human Genetics (Life Member) (Life Member - ID - L/1985/2019)
- Indian Association of Cancer Research (Life Member) (Life Member - ID - LM-1097)

### Editorial Board Member

- World Journal of Diabetes (2018-2021) - Impact Factor 4.56

### Reviewer

- World Journal of Gastroenterology - Impact factor 5.374
- World Journal of Clinical Cases – Impact factor 1.53
- Research Reports -
- GENE - Impact factor 3.91

### Any other

#### Working committee member for biochemistry course revision:

- BSc (H) Biochemistry syllabus revision (**LOCF**)
- BSc (H) Biochemistry syllabus revision (**NEP**)

#### Working committee member of committees at IHE

S. No.	Year	Nature of Activity/committee	Designation	Institution/ Department	Period	
					From	To
1.	<b>2022-2024</b>	IQAC committee	Member	Institute of Home Economics, DU	01 Sept. 2022	August 2024
2.	<b>2022-2023</b>	AISHE committee	Member	Institute of Home Economics, DU	Jan 2022	June 2023
3.	<b>2022-2023</b>	Cultural Committee	Member	Institute of Home Economics, DU	July 2022	June 2023
4.	<b>2022-2023</b>	Admission, Counseling and Grievance Committee	Member	Institute of Home Economics, DU	July 2022	June 2023
5.	<b>2021-2022</b>	Cultural Committee	Member	Institute of Home Economics, DU	July 2021	June 2022
6.	<b>2021-2022</b>	Admission, Counseling and Grievance Committee	Member	Institute of Home Economics, DU	July 2021	June 2022

7.	<b>2020-2021</b>	Cultural Committee	Member	Institute of Home Economics, DU	July 2020	June 2021
8.	<b>2020-2021</b>	Admission, Counseling and Grievance Committee	Member	Institute of Home Economics, DU	July 2020	June 2021
9.	<b>2019-2020</b>	Admission Committee	Member	Institute of Home Economics, DU	Jan 2020	May 2020
10.	<b>2019-2020</b>	Disciplinary Committee	Member	Institute of Home Economics, DU	Jan 2020	May 2020
11.	<b>2019-2020</b>	Literary, Debating and Cultural Committee	Member	Institute of Home Economics, DU	Jan 2020	May 2020
12.	<b>2019-2020</b>	Literary, Debating and Cultural Committee	Member	Institute of Home Economics, DU	July 2019	Dec 2019
13.	<b>2019-2020</b>	Admission Committee	Member	Institute of Home Economics, DU	July 2019	Dec 2019
14.	<b>2018-2019</b>	Placement Committee	Member	Institute of Home Economics, DU	July 2018	June 2019
15.	<b>2018-2019</b>	Admission, Prospectus, Media and Publicity Committee	Member	Institute of Home Economics, DU	July 2018	June 2019
16.	<b>2017-2018</b>	Literary, Debating and Cultural Committee	Member	Institute of Home Economics, DU	Jan 2018	May 2018
17.	<b>2017-2018</b>	Admission Committee	Member	Institute of Home Economics, DU	Jan 2018	May 2018
18.	<b>2017-2018</b>	Cultural Committee	Member	Institute of Home Economics, DU	May 2017	Dec 2017
19.	<b>2017-2018</b>	NSS Committee	Member	Institute of Home Economics, DU	May 2017	Dec 2017
20.	<b>2017-2018</b>	Admission Committee	Member	Institute of Home Economics, DU	May 2017	Dec 2017
21.	<b>2016-2017</b>	Cultural Committee	Member	Institute of Home Economics, DU	Jan 2017	May 2017
22.	<b>2016-2017</b>	Sports Committee	Member	Institute of Home Economics, DU	Jan 2017	May 2017
23.	<b>2016-2017</b>	Internal Assessment Committee	Member	Institute of Home Economics, DU	Jan 2017	May 2017

24.	<b>2016-2017</b>	Sports Committee	Member	Institute of Home Economics, DU	May 2016	Dec 2016
25.	<b>2016-2017</b>	Magazine and Newsletter	Member	Institute of Home Economics, DU	May 2016	Dec 2016
26.	<b>2016-2017</b>	Internal Assessment Committee	Member	Institute of Home Economics, DU	May 2016	Dec 2016

### Short course/FDP/Workshop

- Completed One-Week Online National Faculty Development Program “**Basic IT tools, Advanced Spreadsheet Tools and Statistical Software Package with SPSS**” with “A+” grade jointly organized by University of Delhi and Guru Angad Dev Teaching Learning Centre (TLC), SGTB Khalsa College, University of Delhi under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) of Ministry of Education, held during 27th October – 3rd November 2022
- Completed two weeks workshop with grade A on “**Tools and Techniques in Statistical Analysis**” from Acharya Narayan Dev College, University of Delhi, held during 6-19<sup>th</sup> April, 2021
- Completed two weeks FDP on “**Quantitative methods for data analysis**” from Ramanujan college TLC of MHRD under PMMMNTT, University of Delhi, held during 12-25<sup>th</sup> August, 2020.
- Completed two weeks FDP on “**Advanced Concepts on Developing MOOCs**” from Ramanujan college TLC of MHRD under PMMMNTT, University of Delhi, held during 2-17<sup>th</sup> July, 2020.
- Completed a short workshop and course (**Genome Biology-2020**) at IISER TVM where instructors from EMBL taught on **NGS sequencing** (Oxford NANOPORE MinIon and Illumina). In this course I learnt how to generation of nanopore sequencing data, full genome assembly, analysis of SNPs, structural variants and other alterations, held during 10-17<sup>th</sup> January, 2020)
- Completed one day Faculty Empowerment Workshop entitled “**National Workshop on Computational Chemistry and Molecular Modelling**” organized by Guru Angad Dev TLC of MHRD under PMMMNTT at SGTB Khalsa college, University of Delhi, on 23<sup>rd</sup> March, 2018.

### Workshops and lectures at IHE as organizer/resource person

- Organized International Brain Research Organization (IBRO) funded International Symposium (virtual) entitled “Recent trends in Brain Research: Unlocking the Mysteries” Dates: 22nd-23rd March 2022.
- Participated in the Faculty Development Program “Online teaching using Google classroom and Google meet”, organized by the Website and Automation Committee & Department of Microbiology on 22nd August, 2020.
- Organized and attended Hands-on-National Workshop on “MOODLE- An online learning management system” organized by Department of Biochemistry 1-5th July, 2020.
- Organized an outreach programme on “Unravelling the mystery of DNA” for Class XI & XII students at IHE on 19th August, 2019.
- Organized a lecture series on “Understanding lifestyle disorders: A biochemical perspective”

at IHE on 12th January 2020.

- 2nd Workshop on “PCR & ELISA”, 7th Feb 2019
- 4th Workshop on “Introduction to Clinical Biochemistry”, 24 & 25th January 2019
- 3rd Workshop on “Introduction to Clinical Biochemistry”, 27 & 28th August 2018
- Symposium on “Replacing regulatory experiments on Animals” with PETA India, 26-27 October 2017.
- 2nd Workshop on “Introduction to Clinical Biochemistry” 12th & 13th September 2017
- 1st Workshop on “PCR & ELISA”, 7th April 2017
- 1st Workshop on “Introduction to Clinical Biochemistry”, 1st & 2nd September 2016
- Workshop on “Autodocking part II”, 29th February 2016
- Plenary lecture & workshop on “Autodocking”, 29th January 2016.

### **Molecular and Biochemical techniques handled**

- MS-OFFICE, Graphpad-PRISM, SPSS, Adobe illustrator, linux and R-programming for statistical analysis.
- Familiar with microarray, RNAseq data analysis, genome assembly and variant calling.
- Genomic DNA, plasmid DNA, RNA, and protein isolation and quantification.
- PCR, gradient PCR (Bio-Rad), Reverse transcriptase PCR, Real time PCR (ABI 7500), PCR based gene editing and mutagenesis, gene cloning, RFLP, Automated Sanger’s sequencing (ABI PRISM 3130xl) and Sequenom Mass ARRAY iPLEX.
- Agarose gel electrophoresis (DNA), Polyacrylamide gel electrophoresis (DNA and protein), protein purification by affinity chromatography (His-tag, GST-tag, ion exchange), paper chromatography (nucleic acid), TLC (amino acids and lipids), Western and Southern blotting.
- Handled simple light microscopes and fluorescence microscope, colorimeters, single beam and double beam spectrophotometer, UV-spectrophotometer (SHIMADZU), NanoDrop 2000 spectrophotometer (Thermo), Flow cytometer (FACS).
- Enzyme activity assays, density gradient centrifugation, biochemical assay from blood and serum. Biochemical identification and quantification of different biomolecules (sugars, nucleic acids, proteins and lipids). Buffer preparations, pH-meter handling.
- Mammalian cell culture - routine maintenance and handling of HeLa, MCF-7, MDA-MB231, H1299 cell line, transfection, electroporation, MTT assay, drug treatment, Apoptosis.
- E. coli and Yeast culture, maintenance, DNA cloning, conjugation, transformation, protein expression, purification, growth curve and Yeast two hybrid.
- Mouse handling, antibody production in mouse, Drosophila culture handling and maintenance, Drosophila genetics.

### **Post Ph.D Research experience**

- Currently working as faculty and independent researcher at *Department of Biochemistry, Institute of Home Economics, University of Delhi* and worked in collaboration at *Department of Biosciences, Jamia Millia Islamia*, and at *National Centre of Applied Human Genetics, School of Life Sciences, Jawaharlal Nehru University New Delhi, India, 2015 onwards.*
- During this period, I have published 4 research articles as *corresponding author* and 3 as first author in *peer reviewed international journals.*
- Performed systematic review and meta-analysis with SNP data.



- Literature searched SNPs associated with Cancer and T2D. Standardized and validated PCR RFLP,
- Interpreted and statistically analyzed the genotyping data using SPSS and R.
- Predicted the risk of developing Cancer in patients carrying polymorphisms in background with other risk factors.
- Multi-omics analysis and Machine learning analysis of TCGA, METABRIC and CCLE data using R
- Labelled, isolated and quantified DNA from sample for downstream molecular experiments.