

Academic Profile

Name: Dr. Sumit Kumar Hira, PhD, FAScT

Position Title: Assistant Professor, Department of Zoology, The University of Burdwan, India

A. Personal Statement

I am an immunologist with over a decade of research experience in tumor immunology, dendritic cell biology, and immune modulation in cancer and infectious diseases. My research focuses on understanding immune resistance mechanisms and developing novel dendritic cell-based immunotherapies and nanomedicine strategies to enhance CD8+ T cell and NK cell-mediated antitumor responses. My work has been published in leading journals such as Journal of Immunology, Frontiers in Immunology, Cytotherapy, iScience, and Molecular Pharmaceutics.

My laboratory has received competitive funding from ICMR, DST-SERB, and other national agencies, and I have successfully led multiple projects investigating T cell exhaustion, immune metabolism, and immunotherapy resistance. My long-term goal is to develop translational immunotherapeutic strategies to improve outcomes in cancer patients.

B. Education

University	Degree	Year of passing
Banaras Hindu University	PhD	2014
Banaras Hindu University	MSc	2008
Banaras Hindu University	BSc	2006

C. Positions and Employment

Duration	Post	Organization	Nature
2015–Present	Assistant Professor	The University of Burdwan	Teaching & Research
2015-2015	Assistant Professor	Ananda Mohan College	Teaching

D. Fellowship

Academy	Year of Elect
Fellow West Bengal Academy of Science and Technology	2026

E. Honors and Awards:

Name of Award	Year
Asok Ghosh Memorial Medal, Zoological Society, Kolkata	2025
IUIS Travel Award, International Union of Immunological Societies	2025, 2023
Early Career Faculty Travel Grant, American Association of Immunologists	2024, 2023
DST-SERB, Early Career Research Award	2016
Best Oration Award, Indian Immunology Society	2012
CSIR-UGC NET Junior Research Fellowship	2007

F. Course Taught

Immunology, Evolutionary Biology, Biochemistry, Research Methodology

G. Research Interests

Tumor Immunology and Cancer Immunotherapy, Dendritic Cell Biology, T Cell Exhaustion and Immune Metabolism, Infectious Disease Immunology

H. Thesis Supervision

Student (s)	Degree	Title	Year	Awarded by
Ankush Paladhi	Ph.D.	Studies on the Role of Chemoimmunotherapy in T Cell Response During Colon Cancer Prognosis	2023	University of Burdwan
Abhinandan Rej	Ph.D.	Effect of TGF- β silencing in dendritic cell mediated immunotherapy against lymphoma: Role of cytokine	2023	University of Burdwan

I. Contributions to Science

Dendritic cell-mediated cancer immunotherapy

Our work demonstrated that dendritic cell activation enhances CD8⁺ T cell and NK cell antitumor responses, leading to improved therapeutic outcomes in lymphoma and colorectal cancer.

- Hira SK et al. *Journal of Immunology*, 2024.
- Paladhi A et al., *Frontiers in Immunology*, 2022.
- Hira SK et al., *Cytotherapy*, 2015.

Immune checkpoint modulation and overcoming immunotherapy resistance

Our research identified molecular targets such as STAT3 and thymidine phosphorylase that regulate immune resistance.

- Hira SK et al., *iScience*, 2020.
- Rej A et al., *International Immunopharmacology*, 2023.
- Singh R et al., *Cytotherapy*, 2022.

Nanomedicine-based immune modulation

Our group developed nanoparticle and polymer-based delivery systems that enhance immune activation and therapeutic efficacy.

- Hira SK et al., *ACS Applied Materials and Interfaces*, 2015.
- Srivastava P et al., *Molecular Pharmaceutics*, 2021.

Immunology of infectious diseases

Our group contributed to understanding immune mechanisms and therapeutic targeting in visceral leishmaniasis.

- Manna PP et al., *Cellular Immunology*, 2014.
- Kashif M et al., *Antimicrobial Agents and Chemotherapy*, 2020.

J. Professional Activities

Activity / Membership	Organization	Since
Associate Editor	Frontiers in Immunology	2022
Associate Editor	Frontiers in Oncology	2022
Editorial Member	Scientific Reports	2023
Academic Editor	PLOS ONE	2022-2024
Member	American Association of Immunologists	2021
Member	European Academy for Tumor Immunology	2016
Member	Indian Immunology Society	2010

K. Additional Information: Research Support

Sl No	Name of Project	Funding Agency	Funding Amount(Rs.)	Start Date	End Date
1	Reinvigorating CD8 T-cell Functionality in Colon Cancer through Metabolic Modulation of Tumor-Endothelial Cell and CD8T-cell Interactions: A Novel Approach to Overcome Immune Evasion	ICMR	9721599	20-Feb-2025	19-Feb-2028
2	Exploring Thymidine Phosphorylase as a Novel Target for Colon Cancer Immunotherapy	DST-SERB	5240000	05-Mar-2022	04-Mar-2025
3	Influence of Melatonin on the immunobiology of Dendritic Cell: Role of Innate Immune signals	DST-SERB	5284000	26-Feb-2020	25-Feb-2023
4	Mesoporous silica-based micro/nano materials for Targeted Drug Delivery: Implications in drug resistant cancer cell lines	WB-DST&BT	1999000	20-Aug-2018	19-Aug-2023
5	Targeting molecular Cross-talk between Dendritic cell and NK cell in tumor micro-environment to promote cancer immunity: Role of TLR agonist	DST-SERB	4546000	20-Mar-2018	19-Mar-2021
6	Toll-like receptor agonists and dendritic cell combination immunotherapy in experimental murine lymphoma	UGC	600000	02-Feb-2017	01-Feb-2019
7	Effect of TGF- β silencing in dendritic cell mediated immunotherapy against an aggressive murine lymphoma: Role of cytokine	DST-SERB	3344000	21-Sep-2016	20-Sep-2019

L. Full list of publications

Google Scholar Profile:

https://scholar.google.com/citations?hl=en&user=hK6g67oAAAAJ&view_op=list_works&sortby=pubdate

ORCID Id: <https://orcid.org/0000-0001-6113-4721>

M. Contact

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