



Banita Verma

Postdoctoral Scholar, General and Vascular Surgery

Bio

BIO

I am Banita Verma, a postdoctoral researcher at Stanford University, currently working with Dr. Fredrick M. Dirbas at the Department of Surgery. Our research focus is to understand the type of cell death and the nature of immune responses triggered by FLASH versus conventional radiotherapy in various murine breast cancer models. Additionally, we aim to explore the role of DAMPs released by dying cells in generating immune responses after both FLASH and conventional radiotherapy. Furthermore, we are interested in studying the mechanism behind the low toxicity of the FLASH compared to conventional radiotherapy to the adjacent non-cancerous tissue. To accomplish this goal, our laboratory is actively collaborating with Dr. Bill Loo, who holds great expertise in the field of radiation oncology.

Before joining Stanford University, I served as a postdoctoral researcher at Karolinska Institutet, Sweden from 2021-2023. My research aimed to study the activation mechanism of Cholineacetyltransferase (ChAT), a pivotal enzyme in acetylcholine synthesis. This enzyme is known to be hypoactive in neurodegenerative conditions such as Alzheimer's and Parkinson's disease. Our group successfully synthesized novel compounds capable of enhancing ChAT activity.

I completed my doctoral research in cancer biology at the Department of Experimental Medicine and Biotechnology, PGIMER Chandigarh, India, in 2021. My work was the evaluation of role of TNF- α mediated Necroptosis in breast cancer cells. My primary research interests are cancer biology and cell death pathways.

STANFORD ADVISORS

- Frederick Dirbas, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Presence of key cholinergic enzymes in human spermatozoa and seminal fluid†.** *Biology of reproduction*
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- **Effect of aspirin on the TNF- α -mediated cell survival and death pathways in breast cancer.** *Journal of basic and clinical physiology and pharmacology*
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- **Synthesis, single crystal X-ray, DFT, spectroscopic, molecular docking studies and *in vitro* biological evaluation of compound N-benzyl-4-(4-chlorophenyl)-2-oxobutanamide** *JOURNAL OF MOLECULAR STRUCTURE*
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- **Relative refractoriness of breast cancer cells to tumour necrosis factor- α induced necroptosis.** *Clinical and experimental pharmacology & physiology*
Thakur, B., Saha, L., Bhatia, A.
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- **Effect of dietary AGEs on the transcriptional profile of peripheral blood lymphocytes** *APPLIED FOOD RESEARCH*
Sudha, M., Banita, Ram, A. K., Bhatia, A.
2022; 2 (1)
- **Do Different Stemness Markers Identify Different Pools of Cancer Stem Cells in Malignancies: A Study on ER+ and ER-Breast Cancer Cell Lines.** *Pathology oncology research : POR*
Chopra, S., Goel, S., Thakur, B., Bhatia, A.
2020; 26 (1): 371-378
- **Programmed necrosis and its role in management of breast cancer.** *Pathology, research and practice*
Thakur, B., Kumar, Y., Bhatia, A.
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