सी डी एफ डी CDFD

डी एन ए फिंगरप्रिंटिंग एवं निदान केन्द्र
(जैव प्रौद्योगिकी विभाग, विज्ञान एवं प्रौद्योगिकी मंत्रालय, भारत सरकार का स्वायत्त संस्थान)
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Director

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Citation on the outstanding research work done by Dr. Sangita Mukhopadhyay

Dr. Sangita Mukhopadhyay has made outstanding scientific contributions in understanding host pathogen interactions with respect to tuberculosis especially in understanding the mechanisms by which *Mycobacterium tuberculosis* hijacks protective host immune responses, designing of therapeutic immunomodulators and its implication on human health.

Dr. Mukhopadhyay's work contributed to knowledge on how the innate and adaptive immune response of host are hijacked by some *Mycobacterium tuberculosis* virulent proteins which are now considered as potential drug targets. While *M. tuberculosis* uses some of these proteins to suppress host inflammatory immune responses to favor its survival, Dr. Mukhopadhyay demonstrated that the same properties could be exploited to dampen the effects of extreme inflammation observed in situations such as tissue injury, and acute and chronic inflammation. Dr. Mukhopadhyay identified, for the first time, a novel biologic PPE2 protein from *M. tuberculosis,* and a PPE2-derived synthetic peptide that reduces mast cell population at the site of tissue-injury by targeting scf-transcription in fibroblasts. Efficacy of commercial drugs available for neutralization of one or a few mast cell mediators are often limited due to lack of their cell specificity. Therefore, selective suppression of mast cells with use of PPE2 protein/peptide provide better and broad-spectrum relief of excessive inflammation. This invention provides an attractive therapeutic alternative to steroid-based anti-inflammatory drugs for the treatment of Inflammation/Tissue injury and mast-cell centric disorders like Wound healing, Inflammatory Bowel Disease and Cancer.

Dr. Mukhopadhyay's work makes a significant contribution in preventing TB infection and disease associated with inflammation. Based on her research contribution, I am pleased to nominate **Dr. Sangita Mukhopadhyay** for **'Sun Pharma Science Foundation Research Fellowships, 2024 in Medical Sciences – Basic Research'.**

[PROF. ULLAS KOLTHUR-SEETHARAM]

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