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August 23, 2023

Re: Sun Pharma Science Foundation Award Nomination

I am writing this letter to enthusiastically recommend Dr. Amit Singh (Amit) for the Sun Pharma Research Awards- 2023. I am a recipient of the Ranbaxy Science Foundation award, and an Honorary Professor at IISc. Amit was recruited as Assistant Professor of Microbiology and Cell Biology during my tenure as the Chair of the Department. Subsequently, during my tenure as Chair of the Division of Biological Sciences, recognising his outstanding research and role as Assistant Professor, Amit was promoted as Associate Professor in an out of term promotion (done rarely). Amit is one of the most talented and incredibly gifted scientists we have in India, addressing challenging and socially relevant questions on biology and drug discovery aspects for the diseases caused by *Mycobacterium tuberculosis (Mtb)* and HIV. Investigating how redox metabolism of intracellular *Mtb* controls susceptibility to antibiotics required him to take on the demanding role of developing innovative technologies to image dynamic changes in the redox physiology of *Mtb* inside immune-cells. After constructing this non-invasive genetic biosensor (Mrx1-roGFP2), he used it successfully to dissect the bacterial and host immune mechanisms controlling redox metabolism and response to antibiotics. This technological innovation led to several high impact publications including *Science Advances*, *PLoS Pathogens*, and *eLIFE*. These important studies laid foundation for his discovery of an immune pathway that could be targeted by antimalarial drug chloroquine to potentiate the efficacy of anti-tuberculosis drugs during infection. This study published in *Science Translational Medicine* is indeed a tour de force combining extensive biochemistry, cell biology, animal experiments, and microscopy/FACS, appreciated by international scientific community for its basic research on *Mtb* biology and translational potential for urgently needed new combination therapy in TB treatment.

Amit has successfully spearheaded other projects related to the basic biology of tuberculosis and HIV-TB co-infection. He discovered complex interactions between HIV, *Mtb*, and immune cells that deregulate immuno-metabolism essential for controlling the disease severity (*J Biol Chem*, *mBio,* and *EMBO**)***. Amit is also highly successful in acquiring research funds from national and international grant agencies such as Wellcome Trust-DBT India Alliance fellowships, NIH, USA and BBSRC-UK, and MRC-UK. Additionally, he directed setting up and managing national-level biosafety level 3 facilities and COVID testing laboratory at IISc.

I have witnessed Amit's continued upward trajectory from his post-doctoral period to his successful journey at IISc, I am delighted to nominate him for this coveted award. Amit's track record of "making science happen" is sure to continue. Amit richly deserved the award, and I am sure that this award will go a long way in boosting his research aspirations. My strongest recommendations.

Yours sincerely,

(Umesh Varshney)
Hon. Professor