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To,

29/08/2024

The Selection Committee

Sun Pharma Science Foundation

Subject: Certifying the completion of research work submitted for Sun Pharma Science Foundation Science Scholar Fellowship

Dear Selection Committee,

This is to certify that Ms. Oyahida Khatun, a final-year Ph.D. student in my laboratory, has successfully completed the research work submitted for the Sun Pharma Science Foundation Science Scholar Fellowship. Her Ph.D. project is 'Studies on human respiratory RNA virus-host interactions and development of antiviral strategies'. Her research focused on identifying and characterizing cellular target for host-directed therapy. Here, a meta-analysis of published transcriptome and proteome was conducted and Thioredoxin was identified as the upregulated host-factor. She demonstrated that, Auranofin, an FDA-approved inhibitor of thioredoxin, can mitigate SARS-CoV-2 replication *in vitro* and *in vivo*. Furthermore, she showed that Auranofin synergizes with nucleoside analogue, remdesivir and molnupiravir, thereby enhancing their antiviral activity against SARS-CoV-2.

Oyahida's research has been completed, with the majority of her findings already published in the journal *EBioMedicine* (DOI: [10.1016/j.ebiom.2021.103525](https://doi.org/10.1016/j.ebiom.2021.103525)). The remaining work is currently under manuscript preparation and will soon be uploaded to bioRxiv.

Another key chapter of her research focuses on the SARS-CoV-2 ORF6 protein. She showed that SARS-CoV-2 ORF6 protein antagonizes host innate immune pathway. She explored the underlying mechanism of this antagonism and showed that it inhibits nuclear translocation of host transcription factors, inhibit the K63-linked ubiquitination of RIG-I and thereby

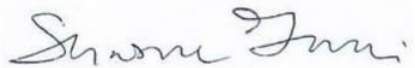
inhibiting downstream type I IFN induction and signaling. This involves ORF6-mediated degradation of TRIM25, a process observed during SARS-CoV-2 infection.

This chapter of her research has been published in the journal *Cellular and Molecular Life Sciences* (DOI: [10.1007/s00018-023-05011-3](https://doi.org/10.1007/s00018-023-05011-3)).

Oyahida has successfully completed her research work and, based on her significant contributions, she is a strong candidate for this award. I endorse her application strongly.

Thanking You,

Sincerely,



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