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August 21, 2024

Subject: Justification letter from the nominator for sponsoring the nomination.

Award Committee Chair:

As COVID-19 infection caused severe public health concerns recently, the development of novel antivirals has become the need of the hour. Main protease (M^{pro}) has been an attractive target for antiviral drugs since it plays a vital role in polyprotein processing and virus maturation. Nilu Gone's extensive efforts during the COVID time has led to the discovery of a novel class of inhibitors against the SARS-CoV-2, bearing histidine α-nitrile motif embedded on a simple dipeptide framework. *In-vitro* and *in-silico* studies revealed that the histidine α-nitrile motif envisioned to target the M^{pro} contributes to the inhibitory activity. Among a series of dipeptides synthesized featuring this novel structural motif, some compounds displayed strong viral reduction (EC_{50} = 0.48 µM) with a high selectivity index, SI >454.54. These compounds also exhibit strong binding energies in the range of -28.7 -to -34.2 Kcal/mol. The simple dipeptide structural framework, amenable to quick structural variations, coupled with ease of synthesis from readily available commercial starting materials are the major attractive features of this novel class of SARS-CoV-2 inhibitors reported by Nilu Gone. These novel molecules raise the hope of discovering potent drug candidates to fight the dreaded SARS-CoV-2 and its variants. This work has been published recently. **Nilu Gone** *et al*: "Discovery of SARS-CoV-2 Inhibitors Featuring Novel Histidine α-Nitrile Motif" *Chem. Biodiversity.*, **2023**, e202300957 (DOI: https://doi.org/10.1002/cbdv.202300957). Patent application filed: **Nilu V. Gone,** Kiran Bokar, G. J. Sanjayan, "SARS-COV-2 inhibitors and method of preparation thereof". Patent application number: 0051NF2024/IN, **2021**.

With best regards and season's greetings,

Gangadhar J. Sanjayan