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# Drug Discovery Targeting COVID-19

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This special collection really needs no introduction. The rationale behind it is exceedingly obvious. It focuses on drug discovery efforts toward the current global pandemic of COVID-19 (coronavirus disease 2019) caused by a novel coronavirus, SARS-CoV-2. The government, academic, and industrial biotech sectors have been relentless in their approach to solve this problem as the world anxiously awaits these efforts to pay off. The importance of a successful resolution is beyond comprehension as tens of millions of people have been afflicted, amounting to millions of deaths since its emergence in late 2019. The world has dealt with the SARS2 virus by trying to protect itself in many ways: practicing social distancing, wearing masks, instituting rapid testing, and using contact tracing for those confirmed infected, followed by isolation for sometimes weeks on end. In response, the scientific community has been deeply invested in rapidly determining drug targets, building strategies and reagents, and testing drugs and vaccines, all the while disseminating their findings and information more quickly than ever before.

The silver lining to this is that almost all sectors in the biosciences have recommissioned themselves to study the virus and combined their efforts, globally, to find a cure. Exactly how and when that is achieved remains to be seen, but rest assured that human resilience will overcome this pandemic and we will prevail. Within this issue, you will see how multiple organizations from around the world have attacked this problem.

In this special collection, you will find seven articles in total that have been highly scrutinized and peer reviewed, revised, reviewed again, cycled again in some cases, and finally published as open access articles. We at *SLAS Discovery* and the authors are proud to make these articles freely available to the worldwide community. We hope this will accelerate the discovery for not only this virus but also future pandemic outbreaks we perceive will eventually occur.

The first four articles, by Banday,<sup>1</sup> Maciorowski,<sup>2</sup> Nazeam,<sup>3</sup> and Zhu<sup>4</sup> and their coauthors, are reviews and detail the repurposing of drugs, a common theme and approach toward rapidly treating COVID-19. They also focus on how to target the virus by using new vaccines and preclinical and clinical drugs, including remdesivir, as well as inhibiting the RNA-dependent RNA polymerase.

The next two articles are Original Research papers that focus on the novel proteins necessary for the viral replication life cycle. In the paper by Smith et al.,<sup>5</sup> an ultra-high-throughput

screening platform targeting PLPro was used to investigate >13,000 clinically applicable drugs called the ReFrame collection, a library available for just such studies, built by Calibr and the Bill and Melinda Gates Foundation. Viridi et al.<sup>6</sup> tested drug-like ligands for their efficacy against the MAC domain of SARS2 Nsp3, a novel target of unmet need that is greatly appreciated and much needed in terms of out-of-the-box approaches. The special collection closes with a commentary that again focuses on repurposing a known drug, in this case nimesulide, to be used as a possible adjuvant in the treatment of the virus, which functions by potent inhibition of the BOAT1 domain.<sup>7</sup>

All said, this is a very nice accomplishment for all of these researchers, which I hope all will appreciate.

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