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Special Issue on

Human Respiratory and Gastrointestinal Viruses: Prospects for Novel Vaccines and Therapeutic Approaches

CALL FOR PAPERS

Respiratory and gastrointestinal viruses are responsible for the high rates of morbidity and mortality among humans of all age groups. Both previously discovered and emerging respiratory (e.g., influenza virus, parainfluenza virus, human bocavirus, and rhinovirus) and gastrointestinal viruses (e.g., rotavirus, norovirus, sapovirus, adenovirus, and astrovirus) account for substantial economic burden and global public health problems. Available antiviral drugs, vaccines, and therapeutic agents against the deadly flu infections are largely ineffective owing to increased frequency of mutations across the influenza virus subtypes. Furthermore, unpredictable nature of pandemic virus emergence complicates treatment and prevention strategies.

Similarly, every few years, a distinct GII.4 human norovirus strain emerges globally due to evasion of immunity in the human population. Furthermore, development of a human norovirus vaccine has been hindered due to lack of established cell culture methods for propagating human norovirus, and hence other vaccine-based strategies such as the potentials of virus-like particles (VLPs) are currently being explored. Additionally, lack of knowledge about the immunological and pathogenic mechanism of emerging viruses also hinders development of novel therapeutic strategies.

Potential topics include but are not limited to the following:

- Key methods for improvement of available vaccines (e.g., prime boost, use of alternative immunization routes, and use of improved adjuvants)
- Novel strategies for immunotherapeutic and vaccine development (e.g., novel antigen design, synthetic DNA and mRNA vaccines, virus-like particles (VLPs), cytotoxic T-lymphocytes (CTLs) inducing methods, and viral vectors)
- Advances in improved understanding of mechanisms of protection
- Alternative approaches for alleviating disease burden against respiratory and gastrointestinal viruses

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