

Special Issue

HIV and SARS-CoV-2: Evolutionary Dynamics

Message from the Guest Editor

Two viruses in recent history have managed to successfully jump species and reach pandemic proportions—human immunodeficiency virus (HIV-1) in 1981 and severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) in 2019. The adaptation of these viruses to humans and what makes them highly transmissible or effective viruses is a remarkable story. Studying within-host evolution of SARS-CoV-2 in chronically infected patients revealed it to be driven by immune escape from neutralizing antibodies in the absence of adequate B and T cell responses. This not only provided insights into the dynamic evolution of a virus thought to be slowly evolving on a population level but also turned out to be the blueprint for the emergence of virus variants that threaten the success of vaccines and longer-term control of the pandemic. This by no means is the only route of immune escape, and this Special Issue serves to bring together the up-to-date knowledge on within-host adaptations of HIV-1 and SARS-CoV-2 and what makes these viruses successful in evading the host immune system and establishing prolonged infection.

Guest Editor

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Deadline for manuscript submissions

31 December 2025



Tropical Medicine and Infectious Disease

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 4.7
Indexed in PubMed



mdpi.com/si/230655

*Tropical Medicine and
Infectious Disease*
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