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COMMENTARY

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Role of hemagglutinin-esterase protein in SARS-CoV-2 infection?

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In a published mini-review article in *Cell Biology International*, the authors considered hemagglutinin-esterase (HE) as a structural protein of SARS-CoV-2 which has roles in the entry and release processes of virus (Tantuoyir & Rezaei, 2020). Coronaviruses are divided in four genera including alpha-, beta-, gamma-, and delta-coronavirus (Yang & Leibowitz, 2015). The five subgenera are recognized within the genus *betacoronavirus* (Yang & Leibowitz, 2015). SARS-CoV-2 as a beta-coronavirus in lineage B causes COVID-19 (Letko et al., 2020). It encodes four structural proteins: (1) the spike-surface glycoprotein, (2) the small envelope protein, (3) the membrane glycoprotein, and (4) the nucleocapsid protein, also several nonstructural proteins (Yin, 2020); however, other betacoronaviruses in lineage A such as HCoV-OC43, HCoV-HKU1, BCoV, and MHV encode HE (Yang & Leibowitz, 2015). As a result, according to evidence, the genome of SARS-CoV-2 lacks the HE gene, therefore, HE cannot have a role in SARS-CoV-2 replication.

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