

Severe acute respiratory syndrome-2 encodes hemagglutinin esterase?

Dear Editor

I read with interest the article by AL-Eitan et al.¹ of Pharmacogenomics of genetic polymorphism within the genes responsible for severe acute respiratory syndrome-2 (SARS-CoV-2) susceptibility and the drug-metabolising genes used in treatment. I appreciate their article, however, the authors reported that "Structural proteins in SARS-CoV-2 particles, include spike glycoprotein (S), envelope protein (E), membrane protein (M), nucleocapsid protein (N) and hemagglutinin-esterase protein (HE)"; in addition, the authors presented HE as a structural protein of SARS-CoV-2 in fig. 1a.¹ But based on scientific evidence, the genome of SARS-CoV-2 as a *Beta-coronavirus* of *Sarbecovirus* (lineage B) lacks HE gene²⁻⁴; thus, SARS-CoV-2 encodes four structural proteins: S, E, M and N.^{5,6}

Phylogenetic analysis showed that the SARS-CoV-2 fell within the subgenus *Sarbecovirus* (lineage B) of the genus *Betacoronavirus*.⁷ Viruses in subgenus *Sarbecovirus* such as SARS-CoV-2 and SARS-CoV cannot encode HE; however, HKU1-CoV, OC43-CoV, murine hepatitis virus and Bovine-CoV as subgenus *Embecovirus* (lineage A) of genus *Betacoronavirus* encode five structural proteins: S, E, M, and N and HE.^{8,9}

In conclusion, SARS-CoV-2, the causative agent of the Covid-19, lacks HE protein.

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AUTHOR CONTRIBUTION

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