

Review of: "Co-expression of the SARS-CoV-2 entry receptors ACE2 and TMPRSS2 in healthy human conjunctiva"

Ruiqi Ma¹, Dongsheng Chen², Jjhong Wu¹, Jiang Qian¹

¹ Fudan University

² Beijing Genomics Institute

Potential competing interests: The author(s) declared that no potential competing interests exist.

The angiotensin-converting enzyme 2 (ACE2) and transmembrane protease serine 2 (TMPRSS2) are considered as the receptors of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). Mencucci et al. evaluated the expression of ACE2 and TMPRSS2 in both immortalized human conjunctival epithelial cell line and healthy human conjunctiva tissues, reaching a conclusion that the ACE2 and TMPRSS2 proteins were detectable in all samples. This study provides evidence that the conjunctiva may be in part responsible for SARS-CoV-2 infection.

In our previous study, single-cell sequencing revealed that *ACE2* and *TMPRSS2* were co-expressed in several cell types, including epithelial cells, endothelial cells, macrophage and goblet cells. Notably, the *ACE2* and *TMPRSS2* showed highest expression in the conjunctival goblet cells, indicating that the goblet cells may be more responsible for SARS-CoV-2 infection than other cell types. Further study is necessary to evaluate the protein levels in different cell types to confirm the major target of SARS-CoV-2 in conjunctiva.