CLAIMS

1. A recombinant/fusion polypeptide comprising:
a mutated angiotensin converting enzyme 2 (ACE2) protein, or fragment thereof at least 95% identical thereto, and
an immunoglobulin Fc region,
wherein the ACE2 protein or fragment thereof comprises one of the following combination of mutations:
T27Y/K31H/H34A,
T27Y/K31Y/H34A,
T27Y/K31H/H34V, or
T27Y/K31Y/H34V.

2. The recombinant/fusion polypeptide of claim 1, wherein the the immunoglobulin Fc region is a human IgG Fc region.

3. The recombinant/fusion polypeptide of claims 1 or 2, wherein the immunoglobulin Fc region comprises the sequence:

EPKSCDKTHTCPPCPAPELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEV
KFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALP
APIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQP
ENNYKTTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLS
PGK (SEQ ID NO: 23).

4. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the recombinant/fusion polypeptide binds to a viral protein, wherein the viral protein is a Coronavirus protein or a Flaviviridae protein.

5. The recombinant/fusion polypeptide of claim 4, wherein the coronavirus is a Severe Acute Respiratory Syndrome virus, such as severe acute respiratory syndrome 1 (SARS-CoV-1), severe acute respiratory syndrome 2 (SARS-CoV-2), and the like.

6. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the ACE2 protein or fragment thereof comprises the following combination of mutations: T27Y/K31H/H34A.

7. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the ACE2 protein or fragment thereof comprises the following combination of mutations: T27Y/K31H/H34V.

8. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the recombinant/fusion polypeptide is capable of binding to a virus, optionally the recombinant/fusion polypeptide is capable of binding

blocking/interfering/inhibiting/hindering/disrupting the binding of a virus (such as SARS-CoV-2) binding to a cell entry receptor.

9. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the ACE2 protein or fragment thereof comprises one or more mutations that abolishes the natural peptidase activity of ACE2.

10. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the ACE2 protein or fragment thereof comprises a mutation at amino acid position 273 and/or 505, for example positions 273 and/or 505 as set forth in SEQ ID NO: 24.

11. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the ACE2 protein or fragment thereof further comprises a R273Q and/or a H505L mutation, such as both R273Q and H505L.

12. The recombinant/fusion polypeptide of claim 11, wherein the recombinant/fusion protein or fragment thereof comprising a R273Q and/or H505L mutation comprises the sequence:

QSTIEEQAKTFLDKFNHEAEDLFYQSSLASWNYNTNITEENVQNMNNAGDKWSAFLK
EQSTLAQMYPLQEIQNLTVKLQLQALQQNGSSVLSEDKSKRLNTILNTMSTIYSTGKV
CNPDNPQECLLLEPGLNEIMANSLDYNERLWAWESWRSEVGKQLRPLYEEYVVLKN
EMARANHYEDYGDYWRGDYEVNGVDGYDYSRGQLIEDVEHTFEEIKPLYEHLHAYV
RAKLMNAYPSYISPIGCLPAHLLGDMWG***Q***FWTNLYSLTVPFGQKPNIDVTDAMVDQA
WDAQRIFKEAEKFFVSVGLPNMTQGFWENSMLTDPGNVQKAVCHPTAWDLGKGDF
RILMCTKVTMDDFLTAHHEMGHIQYDMAYAAQPFLLRNGANEGFHEAVGEIMSLSAA
TPKHLKSIGLLSPDFQEDNETEINFLLKQALTIVGTLPFTYMLEKWRWMVFKGEIPKDQ
WMKKWWEMKREIVGVVEPVPHDETYCDPASLF***L***VSNDYSFIRYYTRTLYQFQFQEAL
CQAAKHEGPLHKCDISNSTEAGQKLFNMLRLGKSEPWTLALENVVGAKNMNVRPLLN
YFEPLFTWLKDQNKNSFVGWSTDWSPYADQSIKVRISLKSALGDKAYEWNDNEMYLF
RSSVAYAMRQYFLKVKNQMILFGEEDVRVANLKPRISFNFFVTAPKNVSDIIPRTEVEK
AIRMSRSRINDAFRLNDNSLEFLGIQPTLGPPNQPPVSEPKSCDKTHTCPPCPAPELL
GGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPR
EEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPQVYT
LPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLYS
KLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPGK (SEQ ID NO: 22).

13. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the recombinant/fusion protein or fragment thereof comprises an amino acid sequence selected from the group consisting of SEQ ID NOs: 1 to 21.

14. The recombinant/fusion polypeptide of any one of the preceding claims, wherein the recombinant/fusion protein or fragment thereof comprises an amino acid sequence selected from the group consisting of SEQ ID NOs: 1 to 4, for example SEQ ID NO: 1.

15. A polynucleotide encoding the recombinant/fusion polypeptide of any one of the preceding claims.

16. A vector comprising the polynucleotide of claim 15.

17. A host cell transfected with or comprising the vector of claim 16.

18. A composition comprising the recombinant/fusion polypeptide of any one of claims 1 to 14.

19. The recombinant/fusion polypeptide of any one of claims 1 to 14 or a composition of claim 18 for use as a therapy or drug.

20. Use of the recombinant/fusion polypeptide of any one of claims 1 to 14 or a composition of claim 18 in the manufacture of a medicament for treating and/or preventing a viral infection in a subject.

21. The recombinant/fusion polypeptide or composition for use of claims 19 , or the use of claim 20, wherein the viral infection is caused by a coronavirus, in particular severe acute respiratory syndrome 1 (SARS-CoV-1), or severe acute respiratory syndrome 2 (SARS-CoV-2.