

Store at  
-80°C

# Human ACE2 (18-652) Recombinant Protein (hFc-Tag)

#99339

20 µg



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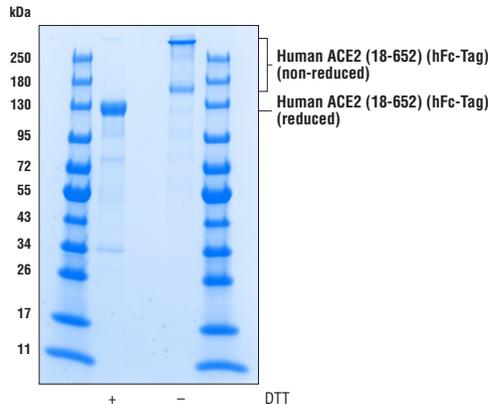
**Orders:** 877-616-2355 (U.S.)  
orders@cellsignal.com

**Entrez-Gene ID** #59272  
**UniProt ID** #Q9BYF1

## For Research Use Only. Not for Use in Diagnostic Procedures.

**Description:** Human ACE2 (18-652) Recombinant Protein (hFc-Tag) is derived from a recombinant expression construct corresponding to the extracellular domain of human ACE2 protein, including the sequence regions that function as receptors for SARS and SARS-CoV-2 coronaviruses. The expressed protein contains a human IgG1 Fc-Tag at its carboxy terminus.

**Background:** ACE2 is a carboxypeptidase that catalyses the conversion of angiotensin I to angiotensin 1-9, or of angiotensin II to the vasodilator angiotensin 1-7 (1). ACE2 is a critical component in the renin-angiotensin system (RAS). ACE2 is predominantly expressed in vascular endothelial cells of the heart and kidney and Leydig and Sertoli cells of the testis (2,3). The unique expression pattern of ACE2 determines its essential role in the regulation of cardiovascular and kidney functions, as well as fertility. ACE2 protein is localized mainly in the extracellular space with its carboxy terminal end attached to the membrane via its transmembrane domain. Active ACE2 enzyme is secreted by cleavage at the amino terminus. Research studies have shown that ACE2 expression is elevated in human failing heart (4). ACE2 has also been identified as the receptor for SARS and SARS-CoV-2 coronaviruses (5-7).



The purity of Human ACE2 (18-652) Recombinant Protein (hFc-Tag) was determined by densitometry after SDS-PAGE of 2 µg of protein, followed by staining with Coomassie Blue. Purity values were determined from the DTT-reduced samples (+).

**Molecular Weight:** 150, 300 kDa (non-reduced);  
130 kDa (reduced)

### Formulation:

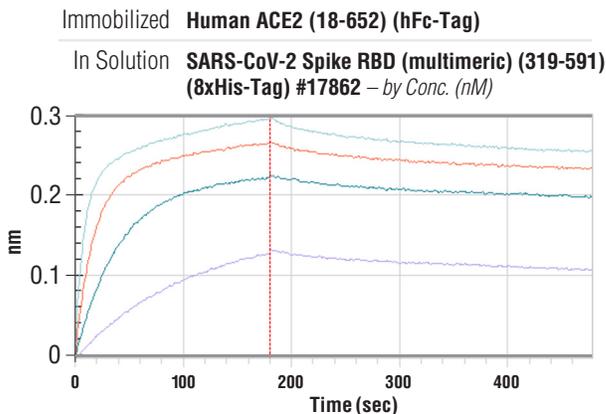
Expression Host: Human (HEK293 cells)  
Supplied in a PBS solution (pH 7.2).

**Purity:** 79%, determined by SDS-PAGE.

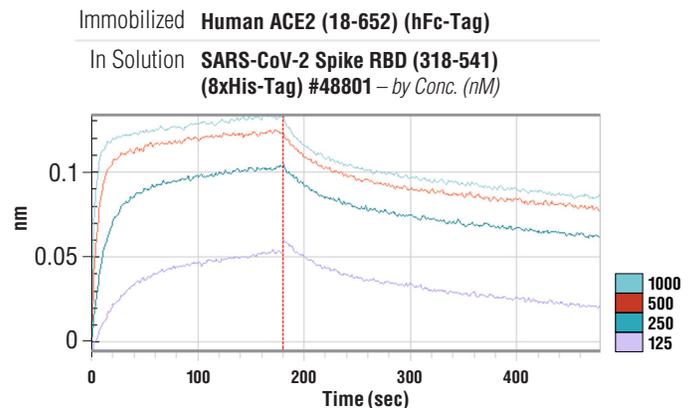
**Storage:** Stable at -80°C for 3 years after receipt. Avoid repeated freeze-thaw cycles.

### Background References:

- (1) Schmidt, B.L. et al. (2000) *J Clin Microbiol* 38, 1279-82.
- (2) Boehm, M. and Nabel, E.G. (2002) *N Engl J Med* 347, 1795-7.
- (3) Douglas, G.C. et al. (2004) *Endocrinology* 145, 4703-11.
- (4) Goulter, A.B. et al. (2004) *BMC Med* 2, 19.
- (5) Li, W. et al. (2005) *EMBO J* 24, 1634-43.
- (6) Hoffmann, M. et al. (2020) *Cell* 181, 271-280.e8.
- (7) Lan, J. et al. (2020) *Nature* 581, 215-20.



Binding response kinetics between Human ACE2 (18-652) Recombinant Protein (hFc-Tag) (immobilized) and SARS-CoV-2 Spike RBD (multimeric) (319-591) Recombinant Protein (8xHis-Tag) #17862 (in solution, at indicated concentrations). The vertical red line (180 sec) indicates addition of PBS to induce dissociation. Binding was detected using an anti-human Fc biosensor. Values on y-axis indicate binding response signals recorded for 4 different concentrations of SARS-CoV-2 Spike RBD (multimeric) (319-591) Recombinant Protein (8xHis-Tag) #17862 (125, 250, 500 and 1000 nM).



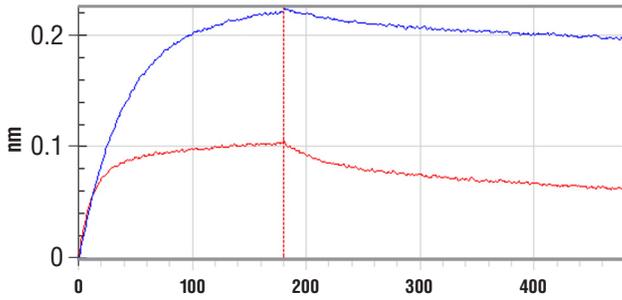
Binding response kinetics between Human ACE2 (18-652) Recombinant Protein (hFc-Tag) (immobilized) and SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (8xHis-Tag) #48801 (in solution, at indicated concentrations). The vertical red line (180 sec) indicates addition of PBS to induce dissociation. Binding was detected using an anti-human Fc biosensor. Values on y-axis indicate binding response signals recorded for 4 different concentrations of SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (8xHis-Tag) #48801 (125, 250, 500 and 1000 nM).

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Immobilized **Human ACE2 (18-652) (hFc-Tag)**

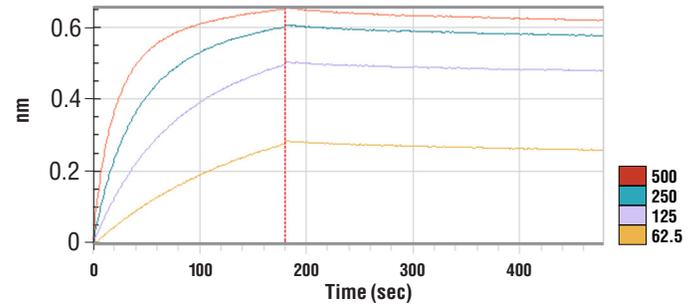
In Solution **SARS-CoV-2 Spike RBD (multimeric) (319-591) (8xHis-Tag) #17862 (blue)**  
**SARS-CoV-2 Spike RBD (318-541) (8xHis-Tag) #48801 (red)**



Binding response kinetics between Human ACE2 (18-652) Recombinant Protein (hFc-Tag) (immobilized), SARS-CoV-2 Spike RBD (multimeric) (319-591) (8xHis-Tag) #17862 (in solution, 250 nM, blue) and SARS-CoV-2 Spike RBD (318-541) Recombinant Protein (8xHis-Tag) #48801 (in solution, 250 nM, red). The vertical red line (180 sec) indicates addition of PBS to induce dissociation. Binding was detected with an anti-human Fc biosensor. Values on y-axis indicate binding response signals recorded for each protein in solution at the indicated concentration.

Immobilized **Human ACE2 (18-652) (hFc-Tag)**

In Solution **SARS-CoV-2 Spike (trimeric) (16-1208) (8xHis-Tag) #65444 – by Conc. (nM)**



Binding response kinetics between Human ACE2 (18-652) Recombinant Protein (hFc-Tag) (immobilized) and SARS-CoV-2 Spike (trimeric) (16-1208) Recombinant Protein (8xHis-Tag) #65444 (in solution, at indicated concentrations). The vertical red line (180 sec) indicates addition of PBS to induce dissociation. Binding was detected using an anti-human Fc biosensor. Values on y-axis indicate binding response signals recorded for 4 different concentrations of SARS-CoV-2 Spike (trimeric) (16-1208) Recombinant Protein (8xHis-Tag) #65444 (62.5, 125, 250, and 500 nM).