Human ACE2 / Angiotensin-Converting Enzyme 2 Protein (Fc Tag)

Catalog Number: 10108-H02H

Sino Biological
Biological Solution Specialist

General Information

Gene Name Synonym:

ACEH

Protein Construction:

A DNA sequence encoding the extracellular domain (Met 1-Ser 740) of human ACE2 precursor (NP_068576.1) was expressed with the fused Fc region of human IgG1 at the C-terminus.

Source: Human

Expression Host: HEK293 Cells

QC Testing

Purity: > 95 % as determined by SDS-PAGE

Bio-activity:

1.Measured by its binding ability in a functional ELISA. Immobilized SARS-CoV-2 (2019-nCoV) Spike S1-His (Cat: 40591-V08B1) at 2 μg/mL (100 μL/well) can bind human ACE2 (hFc tag) (Cat: 10108-H02H), the EC50 of ACE2 is 5-35 ng/mL.
2.Captured ACE2（10108-H02H on proA Chip can bind SARS-CoV-2 B.1.1.529 (Omicron) Spike S1 Protein (Cat.No.40591-V08H41) with an affinity constant of 11.78 nM as determined in a SPR assay (Biacore T200)(Routinely tested).
3.Captured ACE2（10108-H02H on anti-Human IgG Fc via CM5 Chip can bind SARS-CoV-2 B.1.1.529 (Omicron) Spike RBD Protein (Cat. No. 40592-V08H121) with an affinity constant of 5.667 nM as determined in a SPR assay (Biacore T200)(Routinely tested).

Endotoxin:

< 1.0 EU per μg of the protein as determined by the LAL method

Stability:

Samples are stable for up to twelve months from date of receipt at -70 ℃

Predicted N terminal: Gln 18

Molecular Mass:

The recombinant human ACE2/Fc is a disulfide-linked homodimeric protein. The reduced monomer consists of 961 amino acids and predicts a molecular mass of 110.3 kDa. As a result of glycosylation, the rhACE2/Fc monomer migrates as approximately 145-150 kDa band in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 100mM Glycine, 10mM NaCl, 50mM Tris, pH 7.5

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

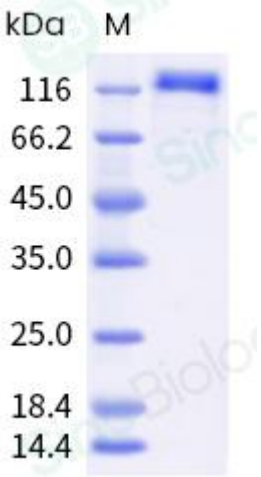
Storage:

Store it under sterile conditions at -20℃ to -80℃ upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:
Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

Angiotensin-converting enzyme 2 (ACE2), a first homolog of ACE, regulates the renin angiotensin system (RAS) by counterbalancing ACE activity. Accumulating evidence in recent years has demonstrated a physiological and pathological role of ACE2 in the cardiovascular, renal and respiratory systems. ACE2 also has an important role in blood pressure control. This enzyme, an homolog of ACE, hydrolyzes angiotensin (Ang) I to produce Ang-(1-9), which is subsequently converted into Ang-(1-7) by a neutral endopeptidase and ACE. ACE2 releases Ang-(1-7) more efficiently than its catalysis of Ang-(1-9) by cleavage of Pro(7)-Phe(8) bound in Ang II. Thus, the major biologically active product of ACE2 is Ang-(1-7), which is considered to be a beneficial peptide of the RAS cascade in the cardiovascular system. A physiological role for ACE2 has been implicated in hypertension, cardiac function, heart function and diabetes, and as a receptor of the severe acute respiratory syndrome coronavirus. In the acute respiratory distress syndrome (ARDS), ACE, AngII, and AT1R promote the disease pathogenesis, whereas ACE2 and the AT2R protect from ARDS. Importantly, ACE2 has been identified as a key SARS-coronavirus receptor and plays a protective role in severe acute respiratory syndrome (SARS) pathogenesis. Furthermore, the recent explosion of research into the ACE2 homolog, collectrin, has revealed a new physiological function of ACE2 as an amino acid transporter, which explains the pathogenic role of gene mutations in Hartnup disorder. This review summarizes and discusses the recently unveiled roles for ACE2 in disease pathogenesis.

References

1.Koitka A, *et al.* (2008) Angiotensin converting enzyme 2 in the kidney. Clin Exp Pharmacol Physiol. 35(4): 420-5. 2.Raizada MK, *et al.* (2007) ACE2: a new target for cardiovascular disease therapeutics. J Cardiovasc Pharmacol. 50(2): 112-9. 3.Imai Y, *et al.* (2007) Angiotensin-converting enzyme 2 (ACE2) in disease pathogenesis. Circ J. 74(3): 405-10.