Data Sheet (Cat.No.TMPY-04312)

TargetMol

ACE2/ACEH Protein, Human, Recombinant (mFc)

General Information

Synonyms:	angiotensin I converting enzyme 2;ACEH
Protein Construction:	A DNA sequence encoding the human ACE2 (NP_068576.1) (Met1-Ser740) was expressed with the Fc region of mouse IgG1 at the C-terminus. Predicted N terminal: Gln 18
Species:	Human
Expression Host:	HEK293 Cells
Accession:	Q9BYF1-1
Molecular Weight:	110 kDa (predicted)

QC Testing

Biological Activity:	Measured by its ability to cleave a fluorogenic peptide substrate, McaYVADAPK (Dnp)OH. The specific activity is >500 pmols/min/ug.
Purity:	> 90 % as determined by SDS-PAGE.
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.4. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:

A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Shipping:

In general, Lyophilized powders are shipping with blue ice.

Protein Background

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.

Reference

Koitka A,et al.(2008) Angiotensin converting enzyme 2 in the kidney. Clin Exp Pharmacol Physiol. 35(4): 420-5.
Raizada MK,et al.(2007) ACE2: a new target for cardiovascular disease therapeutics. J Cardiovasc Pharmacol. 50 (2): 112-9.
Imai Y,et al.(2007) Angiotensin-converting enzyme 2 (ACE2) in disease pathogenesis. Circ J. 74(3): 405-10.
Turner AJ,et al.(2004) ACE2: from vasopeptidase to SARS virus receptor. Trends Pharmacol Sci. 25(6): 291-4.

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