Data Sheet (Cat.No.TMPY-00687)

TargetMol

Complement C2 Protein, Human, Recombinant (hFc)

General Information

Synonyms:	ARMD14;complement component 2;CO2
Protein Construction:	A DNA sequence encoding the human complement component 2 (C2) precursor (NP_000054.2) (Met 1-Leu 752) was fused with the Fc region of human IgG1 at the C-terminus. Predicted N terminal: Ala 21
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P06681-1
Molecular Weight:	110 kDa (predicted); 110-130 kDa (reducing condition, due to glycosylation)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 95 % 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.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Complement component C2 is part of the classical complement pathway which plays a major role in innate immunity against infection. C2 is a glycoprotein synthesized in liver hepatocytes and several other cell types in extrahepatic tissues. This pathway is triggered by a multimolecular complex C1, and subsequently the single-chain form of C2 is cleaved into two chains referred to C2a and C2b by activated C1. The second component of

complement (C2) is a multi-domain serine protease that provides catalytic activity for the C3 and C5 convertases of the classical and lectin pathways of human complement. C4b and C2 was investigated by surface plasmon resonance. C2a containing a serine protease domain combines with complement component C4b to form the C3 convertase C4b2a which is responsible for C3 activation, and leads to the stimulation of adaptive immune responses via Lectin pathway. C2 bound to C4b is cleaved by classical (C1s) or lectin (MASP2) proteases to produce C4bC2a. C2 has the same serine protease domain as C4bC2a but in an inactive zymogen-like conformation, requiring cofactor-induced conformational change for activity. Deficiency of C2 (C2D) is the most common genetic deficiency of the complement system, and two types of C2D have been recognized in the context of specific MHC haplotypes. C2D in human is reported to increase susceptibility to infection, and is associated with certain autoimmune diseases, such as rheumatological disorders.

Reference

Laich A,et al.(2002) Complement C4bC2 complex formation: an investigation by surface plasmon resonance. Biochim Biophys Acta. 1544(1-2): 96-112.

HAlili MA,et al.(2009) Complement component C2, inhibiting a latent serine protease in the classical pathway of complement activation. Biochemistry. 48(35): 8466-72.

Krishnan V,et al.(2009) The structure of C2b, a fragment of complement component C2 produced during C3 convertase formation. Acta Crystallogr D Biol Crystallogr. 65(Pt 3): 266-74.

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