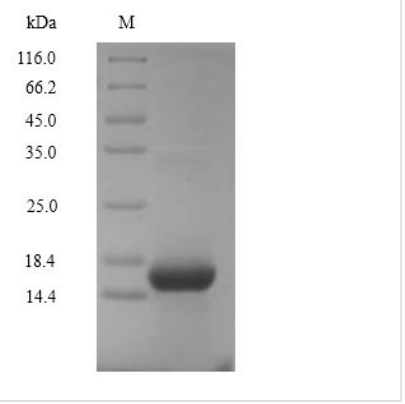
Recombinant Human Complement C5 (C5), partial

Product Code	CSB-MP003995HU
Relevance	Activation of C5 by a C5 convertase initiates the spontaneous assembly of the late complement components, C5-C9, into the membrane attack complex. C5b has a transient binding site for C6. The C5b-C6 complex is the foundation upon which the lytic complex is assembled. Derived from proteolytic degradation of complement C5, C5 anaphylatoxin is a mediator of local inflammatory process. Binding to the receptor C5AR1 induces a variety of responses including intracellular calcium release, contraction of smooth muscle, increased vascular permeability, and histamine release from mast cells and basophilic leukocytes (PubMed:8182049). C5a is also a potent chemokine which stimulates the locomotion of polymorphonuclear leukocytes and directs their migration toward sites of inflammation.
Storage	The shelf life is related to many factors, storage state, buffer ingredients, storage temperature and the stability of the protein itself. Generally, the shelf life of liquid form is 6 months at -20°C/-80°C. The shelf life of lyophilized form is 12 months at -20°C/-80°C.
Uniprot No.	P01031
Storage Buffer	Tris-based buffer,50% glycerol
Product Type	Recombinant Proteins
Immunogen Species	Homo sapiens (Human)
Purity	Greater than 90% as determined by SDS-PAGE.
Sequence	TLQKKIEEIAAKYKHSVVKKCCYDGACVNNDETCEQRAARISLGPRCIKAFTEC CVVASQLRANISHKDMQLGR
Research Area	Signal Transduction
Source	Mammalian cell
Gene Names	C5
Expression Region	678-751aa
Notes	Repeated freezing and thawing is not recommended. Store working aliquots at 4°C for up to one week.
Tag Info	N-terminal 6xHis-Myc-tagged
Mol. Weight	12.3kDa
Protein Description	Partial
Image	



(Tris-Glycine gel) Discontinuous SDS-PAGE (reduced) with 5% enrichment gel and 15% separation gel.

Description

The production of the recombinant human complement C5 involves several steps. First, the gene fragment encoding the 678-751aa of C5 protein is isolated and co-inserted into a vector with the N-terminal 6xHis-Myc-tag gene. The vector acts as a carrier that delivers the targeted gene into mammalian cells for protein expression. The recombinant human C5 protein is extracted from the cell lysate and then purified through affinity chromatography. Its purity is over 90% as measured by SDS-PAGE.

Human Complement C5 is a vital component of the complement system, comprising two polypeptide chains, C5 alpha and C5 beta. C5 alpha can be further processed into C5 alpha' and C5a. It plays a significant role in complement-mediated diseases and immune responses [1][2][3]. Eculizumab, a humanized monoclonal antibody targeting C5, has been effectively used to manage complement-mediated diseases such as paroxysmal nocturnal hemoglobinuria (PNH) and atypical hemolytic uremic syndrome (aHUS) by inhibiting the cleavage of C5 into C5a and C5b [4][5][6]. Inhibition of C5 cleavage is a pivotal strategy in averting complement-mediated endothelial injury and thrombotic microangiopathy [7][8].

References:
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