Active Native Human C2 Protein

Cat. No. C2-98H **Lot. No.** (See product label)

SPECIFICATION

Species	Human
Source	Human Serum
Description	C2 is central to the activation of both the classical and the lectin pathways of complement. It forms the proteolytic subunit of the C3 and C5 convertase of both pathways. Initiation of each pathway generates proteolytic enzyme complexes which are bound to the target surface (C1q/C1r/C1s in the classical pathway and MBL/ Ficolin/ MASPs in the lectin pathway). C1s and MASP in these complexes activate both C4 and C2. They cleave a peptide bond in C4 depositing C4b on the surface. They also cleave C2 into two fragments. The larger fragment (C2a) binds to C4b and forms the C3/C5 convertase enzyme complex C4b,C2a. This enzyme activates C3, deposits C3b on or near the C4b,C2a site and thus is converted from a weak C5 convertase to a highly efficient C5 convertase (C4b,C2a,C3b) with a Km for C5 3000-fold lower than that of the C4b,C2a enzyme alone (Rawal N. and Pangburn M.K. (2003)).
Form	Frozen liquid
Bio-activity	>90% versus normal human serum standard (see Cert of Analysis)
Molecular Mass	93,000 Da (1 chain)
Purity	>95% by SDS-PAGE

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Characteristic	Native human C2 is a naturally glycosylated polypeptide expressed as a 752 amino acid protein containing a 20 amino acid signal sequence. The mature protein contains 732 amino acids and is glycosylated at 8 potential sites all of which are N-linked sites (Morley, B.J. and Walport, M.J. (2000)). The calculated molecular weight of C2 is 81,000 daltons, but due to the high carbohydrate content (approximately 16%) it has been reported to run on reduced SDS-PAGE gels at a wide variety of apparent molecular weights. Depending on the SDS-PAGE system used C2 has been reported to appear as if it is 93,000, 102,000, 110,000, and 117,000 daltons. Upon cleavage of C2 by C1s or MASP two fragments are produced. The larger, C2a, with 509 amino acids forms the C3/C5 convertase of the classical and lectin pathways. C2a comes from the C-terminal of C2 while the smaller fragment, C2b, with 223 amino acids is from the N-terminal. Both contain carbohydrate. C2 has numerous allotypes (A, B, and C) and electrophoretic isoforms that can be separated by isoelectric focusing. The isoforms have pIs in the 6.0 to 6.3 pH range.
Usage	For research use only. Not for human or drug use.
Storage	-70°C or below. Avoid freeze/thaw.
Concentration	0.5 mg/ml (see Certificate of Analysis for exact conc.)
Storage Buffer	10 mM sodium phosphate, 145 mM NaCl, pH 6.0
Preservative	None, 0.22 μm filtered.
Warning	Use normal precautions for handling human blood products.

GENE INFORMATION

Gene Name	C2 complement component 2 [Homo sapiens]

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Official Symbol	C2
Synonyms	C2; complement component 2; complement C2; C3/C5 convertase; complement component C2; CO2; DKFZp779M0311;
Gene ID	717
mRNA Refseq	NM_000063
Protein Refseq	NP_000054
MIM	613927
UniProt ID	P06681
Chromosome Location	6p21.3
Pathway	Activation of C3 and C5, organism-specific biosystem; Complement Activation, Classical Pathway, organism-specific biosystem; Complement and Coagulation Cascades, organism-specific biosystem; Complement and coagulation cascades, organism-specific biosystem; Complement and coagulation cascades, conserved biosystem; Complement cascade, organism-specific biosystem; Immune System, organism-specific biosystem;
Function	peptidase activity; serine-type endopeptidase activity;

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA