

Native Human Factor B

Cat. No. CFB-104H **Lot. No.** (See product label)

SPECIFICATION

Product Overview

Species Human

Source Human Serum

Description

Complement factor B (fB) is purified from normal human serum. Complement factor B is a glycosylated protein composed of a single 93,000 Da polypeptide chain. It is an essential component of the alternative pathway of complement activation and is found in plasma at approximately 200 µg/mL. In the presence of Mg⁺⁺ factor B binds to C3b and the C3b,B complex can be activated by factor D, a serine protease that circulates as an active trypsin-like serine protease. Cleavage of factor B by factor D causes the release of the Ba fragment (33,000 Da) and leaves the 60,000 Bb fragment bound to C3b. This Bb subunit is a serine protease. C3b,Bb is called a C3 and a C5 convertase because it converts both of these proteins to their active forms by cleaving off the small peptides C3a and C5a, respectively (Morikis, D. and Lambris, J.D. (2005); Morley, B.J. and Walport, M.J. (2000)).

Form Frozen liquid

Molecular Mass 93,000 Da (single chain)

Purity >95% by SDS-PAGE

Characteristic Molecular weight: 93,000 daltons, single chain protein containing 7.3-8.6%

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carbohydrate (Rother (1998)). The protein is negatively charged at serum pH and exhibits a heterogeneous pI = 5.6-6.1. Factor B is one of the heat labile proteins of the complement system. It binds divalent metal ions such as Mg⁺⁺ or Ni⁺⁺, which stabilize its interaction with C3b and C3b-like molecules. In the electron microscope factor B exhibits a three domain structure one domain of which is Ba. Bb contains two domains one of which is a von Willebrand factor-like A domain that binds to Mg⁺⁺ and to C3b and the other, the C-terminal domain, contains the active serine protease site. The Ba domain actually contains of three SCR or CCP domains which interact with C3b. Crystal structures for the serine protease domain at 2.1 angstrom resolution (Jing, H. (2000)), the A domain (Milder, F.J. (2007)) and the whole protein (Bhattacharya, A.A. (2004)) at 2.3 Å resolution have been published.

Usage	For research use only. Not for human or drug use.
Storage	-70°C or below. Avoid freeze/thaw.
Concentration	1.0 mg/mL (see Certificate of Analysis for actual concentration)
Storage Buffer	1.0 mg/mL (see Certificate of Analysis for actual concentration)
Preservative	None, 0.22 µm filtered
Warning	Use normal precautions for handling human blood products.

GENE INFORMATION

Gene Name	CFB complement factor B [Homo sapiens]
Official Symbol	CFB
Synonyms	CFB; complement factor B; B factor, properdin , BF, BFD; H2 Bf; C3 proactivator;

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	C3/C5 convertase; C3 proaccelerator; properdin factor B; B-factor, properdin; glycine-rich beta glycoprotein; glycine-rich beta-glycoprotein; BF; FB; BFD; GBG; CFAB; PBF2; AH
Gene ID	629
mRNA Refseq	NM_001710
Protein Refseq	NP_001701
UniProt ID	P00751
Chromosome Location	6p21.3
Pathway	Activation of C3 and C5, organism-specific biosystem; Alternative complement activation, 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; Initial triggering of complement, organism-specific biosystem;
Function	complement binding; peptidase activity; serine-type endopeptidase activity;