

DESCRIPTION

Source	<i>Spodoptera frugiperda</i> , Sf 21 (baculovirus)-derived human Complement Factor H-related 4/CFHR4 protein Gln19-Glu331, with a C-terminal 10-His tag Accession # CAA66980
N-terminal Sequence Analysis	No results obtained. Gln19 inferred from enzymatic pyroglutamate treatment revealing Glu20.
Predicted Molecular Mass	37 kDa

SPECIFICATIONS

SDS-PAGE	39-45 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Mouse Complement Component C3d (Catalog # 2655-C3) is immobilized at 2 µg/mL (100 µL/well), Recombinant Human Complement Factor H-related 4/CFHR4 binds with an ED ₅₀ of 1-6 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in Tris and NaCl with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul style="list-style-type: none"> • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, ≤ -20 °C under sterile conditions after reconstitution.

DATA

Binding Activity

When Recombinant Mouse Complement Component C3d (Catalog # 2655-C3) is immobilized at 2 µg/mL, 100 µL/well, Recombinant Human Complement Factor H-related 4/CFHR4 (Catalog # 5980-CH) binds with an ED₅₀ of 1-6 ng/mL.

SDS-PAGE

2 µg/lane of Recombinant Human Complement Factor H-related 4 was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at ~42 kDa and ~40 kDa, respectively.

BACKGROUND

Complement factor H-related protein 4 (CFHR4) is a secreted glycoprotein member of the factor H family of glycoproteins (1). The human complement factor H protein family consists of the complement and immune regulators factor H, the factor H-like protein 1 (FHL-1) and five factor H-related proteins (FHR-1 to -5) (1). The genes of this family are located on human chromosome 1q32, which is known as the regulator of complement activation (RCA) gene clusters (2). CFHRs are exclusively composed of individually folded protein domains, termed short consensus repeats (SCRs) or complement control modules. All CFHRs, including CFHR4, are capable of binding complement factor C3b, discriminate between self and non-self cell surfaces, and have been proposed to deregulate complement activation by inhibiting interaction of CFH with C3b and C3d (1, 3). CFHR4 activates complement through its interaction with C3b (4). CFHR4 can also bind to native (pentameric) C-reactive protein (pCRP) through its first SCR domain and is suggested to promote pCRP binding to necrotic cells surfaces, thus promoting cell clearance (5). CFHR4 is synthesized as 2 isoforms by hepatocytes and circulates in plasma. The longer 86 kDa alternative splice form termed FHR4A includes a duplication insertion of 247 aa. The CFHR4 product represents the shorter isoform, FHR4B, containing 5 of 9 SCRs (6).

References:

1. Skerka, C. *et al.* (2013) *Mol. Immunol.* **56**:170.
2. Diaz-Guillen, M.A. *et al.* (1999) *Immunogenetics* **49**:549.
3. Hellwege, J. *et al.* (1999) *FEBS Lett.* **462**:345.
4. Hebecker, M. and J. Jozsi (2011) *J. Biol. Chem.* **287**:19528.
5. Mihlan, M. *et al.* (2009) *Mol. Immunol.* **46**:335.
6. Jozsi, M. *et al.* (2005) *Eur. J. Hum. Genet.* **13**:321.