## SANTA CRUZ BIOTECHNOLOGY, INC.

# Factor I (3D6): sc-57507



#### BACKGROUND

The complement pathway is an important host defense system that contributes to both innate and acquired immunity. There are three pathways of complement activation: the classical pathway, lectin pathway and alternative pathway. Complement protein Factor I is a key serine protease that modulates the complement cascade by regulating the levels of C3 convertases. It circulates in plasma as a heavily N-glycosylated heterodimer made up of two disulfide linked chains, each carrying three N-linked oligosaccharide chains that may have both structural and functional roles in the interactions with the natural substrate and the cofactor during catalysis. Factor I is a serine protease with a high degree of specificity for C3b and C4b. It requires protein cofactors for cleavage of these complement proteins; Factor H, CR1 or MCP are required for C3b cleavage, and C4bp or CR1 are required for C4b cleavage.

### REFERENCES

- 1. Schlaf, G., Demberg, T., Koleva, M., Jungermann, K. and Götze, O. 2001. Complement Factor I is upregulated in rat hepatocytes by interleukin-6 but not by interferon- $\gamma$ , interleukin-1 $\beta$  or tumor necrosis factor- $\alpha$ . Biol. Chem. 382: 1089-1094.
- 2. Terado, T., Nonaka, M.I., Nonaka, M. and Kimura, H. 2002. Conservation of the modular structure of complement Factor I through vertebrate evolution. Dev. Comp. Immunol. 26: 403-413.
- 3. Cunnion, K.M., Hair, P.S. and Buescher, E.S. 2004. Cleavage of complement C3b to iC3b on the surface of Staphylococcus aureus is mediated by serum complement Factor I. Infect. Immun. 72: 2858-2863.
- 4. Fremeaux-Bacchi, V., Dragon-Durey, M.A., Blouin, J., Vigneau, C., Kuypers, D., Boudailliez, B., Loirat, C., Rondeau, E. and Fridman, W.H. 2004. Complement Factor I: a susceptibility gene for atypical haemolytic uraemic syndrome, J. Med. Genet, 41: e84.
- 5. Genel, F., Sjöholm, A.G., Skattum, L. and Truedsson, L. 2005. Complement Factor I and immune complex glomerulonephritis. Scand. J. Infect. Dis. 37: 615-618.
- 6. Tsiftsoglou, S.A., Willis, A.C., Li, P., Chen, X., Mitchell, D.A., Rao, Z. and Sim, R.B. 2005. The catalytically active serine protease domain of human complement Factor I. Biochemistry 44: 6239-6249.
- 7. Grumach, A.S., Leitão, M.F., Arruk, V.G., Kirschfink, M. and Condino-Neto, A. 2006. Recurrent infections in partial complement Factor I deficiency: evaluation of three generations of a Brazilian family. Clin. Exp. Immunol. 143: 297-304.
- 8. Liu, W., Liu, B., Xin, L., Zhang, Y., Chen, X., Zhu, Z. and Lin, Y. 2006. Downregulated expression of complement Factor I: A potential suppressive protein for gastric cancer identified by serum proteome analysis. Clin. Chim. Acta 377: 119-126.
- 9. Tsiftsoglou, S.A., Arnold, J.N., Roversi, P., Crispin, M.D., Radcliffe, C., Lea, S.M., Dwek, R.A., Rudd, .PM. and Sim, R.B. 2006. Human complement factor I glycosylation: structural and functional characterisation of the N-linked oligosaccharides. Biochim. Biophys. Acta 1764: 1757-1766.

#### CHROMOSOMAL LOCATION

Genetic locus: CFI (human) mapping to 4q25.

#### SOURCE

Factor I (3D6) is a mouse monoclonal antibody raised against Factor I of human origin.

#### PRODUCT

Each vial contains 100  $\mu$ g lgG<sub>1</sub> in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

#### **APPLICATIONS**

Factor I (3D6) is recommended for detection of Factor I of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Suitable for use as control antibody for Factor I siRNA (h): sc-72081, Factor I shRNA Plasmid (h): sc-72081-SH and Factor I shRNA (h) Lentiviral Particles: sc-72081-V.

Molecular Weight of pro Factor I: 88 kDa.

Molecular Weight of Factor I heavy chain: 50 kDa.

Molecular Weight of Factor I light chain: 38 kDa.

#### **STORAGE**

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

#### **RESEARCH USE**

For research use only, not for use in diagnostic procedures.

#### **PROTOCOLS**

See our web site at www.scbt.com for detailed protocols and support products.