SANTA CRUZ BIOTECHNOLOGY, INC.

C4BP (GMA-036): sc-65970

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The complement component proteins C3, C4 and C5 are potent anaphylatoxins that are released during classical complement activation, a system of ligand-surface protein interactions that aid in the elimination of pathogens. These proteins belong to the α_2-Macroglobulin family, but retain distinctive features including an anaphylatoxin domain and a netrin (NTR) domain. They are also expressed as single-chain precursors, which are cleaved into α, β and γ subunits that are linked by disulfide bonds. Complement C4 is an essential component for the activation of the complement pathway, which acts through the receptor CR1 (CD35). Complement C4 is predominately expressed in liver and its precursor contains C4a anaphylatoxin and C4b. The full length C4 protein is cleaved into an α chain, a β chain and a γ chain. C4 exists as two functionally distinct isotypes, C4A and C4B, which react preferentially with amino groups and hydroxyl groups, respectively. Excessive complement activation by C4 is negatively regulated by C4BP (C4 binding protein), a fluid-phase complement inhibitor that protects against complement-induced cell apoptosis. The C4BP complex contains α and β chains which act together to accelerate inactivation of C4, thereby controlling the classical pathway of complement activation.

REFERENCES

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2. Chung, L.P., et al. 1985. Molecular cloning and characterization of the cDNA coding for C4b-binding protein, a regulatory protein of the classical pathway of the human complement system. Biochem. J. 230: 133-141.
3. Blom, A.M., et al. 1999. A cluster of positively charged amino acids in the C4BP α-chain is crucial for C4b binding and factor I cofactor function. J. Biol. Chem. 274: 19237-19245.
4. Online Mendelian Inheritance in Man, OMIM™. 2000. Johns Hopkins University, Baltimore, MD. MIM Number: 120830. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Blom, A.M., et al. 2000. Positively charged amino acids at the interface between α-chain CCP1 and CCP2 of C4BP are required for regulation of the classical C3-convertase. Mol. Immunol. 37: 445-453.
6. Blom, A.M., et al. 2000. Human C4b-binding protein has overlapping, but not identical, binding sites for C4b and streptococcal M proteins. J. Immunol. 164: 5328-5336.
7. Trouw, L.A., et al. 2007. C4b-binding protein and factor H compensate for the loss of membrane bound complement inhibitors to protect apoptotic cells against excessive complement attack. J. Biol. Chem. 282: 28540-28548.

CHROMOSOMAL LOCATION

Genetic locus: C4BPA/C4BPB (human) mapping to 1q32.2.

SOURCE

C4BP (GMA-036) is a mouse monoclonal antibody raised against C4BP of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

C4BP (GMA-036) is recommended for detection of C4BP, also designated C4b-binding protein of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of C4BP: 70 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.