SANTA CRUZ BIOTECHNOLOGY, INC.

C4BPα (T-19): sc-17210

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

1. Scharfstein, J., Ferreira, A., Gigli, I. and Nussenzweig, V. 1978. Human C4-binding protein. I. Isolation and characterization. J. Exp. Med. 148: 207-222.
2. Chung, L.P., Bentley, D.R. and Reid, K.B. 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., Zadura, A.F., Villoutreix, B.O., and Dahlback, B. 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.
4. Blom, A.M., Berggard, K., Webb, J.H., Lindahl, G., Villoutreix, B.O. and Dahlback, B. 2000. Human C4b-binding protein has overlapping, but not identical, binding sites for C4b and streptococcal M proteins. J. Immunol. 164: 5328-5336.
5. Blom, A.M., Webb, J., Villoutreix, B.O. and Dahlback, B. 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.
6. Trouw, L.A., Bengtsson, A.A., Gelderman, K.A., Dahlbäck, B., Sturfelt, G. and Blom, A.M. 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.
7. Oksjoki, R., Kovanen, P.T., Mäyränpää, M.I., Laine, P., Blom, A.M., Meri, S. and Pentikäinen, M.O. 2007. Complement regulation in human atherosclerotic coronary lesions. Immunohistochemical evidence that C4b-binding protein negatively regulates the classical complement pathway, and that C5b-9 is formed via the alternative complement pathway. Atherosclerosis 192: 40-48.

CHROMOSOMAL LOCATION

Genetic locus: C4BPA (human) mapping to 1q32; C4bp (mouse) mapping to 1 E4.

SOURCE

C4BPα (T-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of C4BPα of rat origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-17210 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

C4BPα (T-19) is recommended for detection of C4BPα of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of C4BPα: 70 kDa.

Positive Controls: rat ovary extract: sc-2399

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.