SANTA CRUZ BIOTECHNOLOGY, INC.

C4BPα (M-53): sc-292602

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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 α2-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 C4α anaphylatoxin and C4β. 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., et al. 1978. Human C4-binding protein. I. Isolation and characterization. J. Exp. Med. 148: 207-222.
2. Chung, L.P., et al. 1985. Molecular cloning and characterization of the cDNA coding for C4β-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 C4β-binding protein has overlapping, but not identical, binding sites for C4β and streptococcal M proteins. J. Immunol. 164: 5328-5336.
7. Trouw, L.A., et al. 2007. C4β-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: C4bp (mouse) mapping to 1 E4.

SOURCE

C4BPα (M-53) is a rabbit polyclonal antibody raised against amino acids 138-190 mapping within an internal region of C4BPα of mouse origin.

PRODUCT

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

APPLICATIONS

C4BPα (M-53) is recommended for detection of C4BPα of mouse and, to a lesser extent, rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

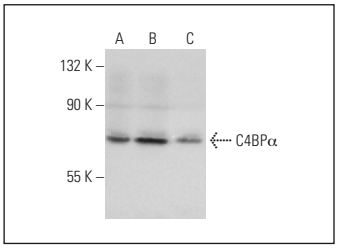
Suitable for use as control antibody for C4BP siRNA (m): sc-42740, C4BP shRNA Plasmid (m): sc-42740-SH and C4BP shRNA (m) Lentiviral Particles: sc-42740-V.

Molecular Weight of C4BPα: 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



C4BPα (M-53): sc-292602. Western blot analysis of C4BPα expression in WiDR (**A**), MCF7 (**B**) and A549 (**C**) whole cell lysates.

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.