SANTA CRUZ BIOTECHNOLOGY, INC.

C4BPα (D-5): sc-398720

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 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 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., 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 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.

CHROMOSOMAL LOCATION

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

SOURCE

C4BPα (D-5) is a mouse monoclonal antibody raised against amino acids 294-491 mapping near the C-terminus of C4BPα of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

C4BPα (D-5) is available conjugated to agarose (sc-398720 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-398720 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-398720 PE), fluorescein (sc-398720 FITC), Alexa Fluor® 488 (sc-398720 AF488), Alexa Fluor® 546 (sc-398720 AF546), Alexa Fluor® 594 (sc-398720 AF594) or Alexa Fluor® 647 (sc-398720 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398720 AF680) or Alexa Fluor® 790 (sc-398720 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

C4BPα (D-5) is recommended for detection of C4BPα of human origin by Western Blotting (starting dilution 1:100, 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 C4BPα siRNA (h): sc-42739, C4BPα shRNA Plasmid (h): sc-42739-SH and C4BPα shRNA (h) Lentiviral Particles: sc-42739-V.

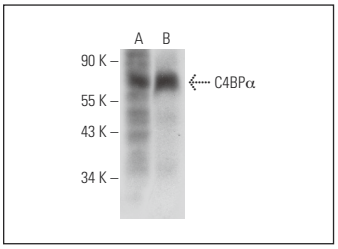
Molecular Weight of C4BPα: 70 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

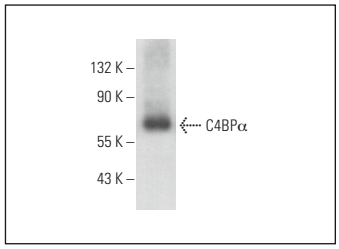
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



C4BPα (D-5): sc-398720. Western blot analysis of C4BPα expression in HeLa whole cell lysate (**A**) and human liver tissue extract (**B**).



C4BPα (D-5): sc-398720. Western blot analysis of C4BPα expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Soares Martins, T., et al. 2022. Novel exosome biomarker candidates for Alzheimer's disease unravelled through mass spectrometry analysis. Mol. Neurobiol. 59: 2838-2854.

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.