

C5 α (S-16): sc-21940

BACKGROUND

C3 α , C4 α and C5 α are potent anaphylatoxins that are released during complement activation, a system of ligand-surface protein interactions specific to cells of hematopoietic lineage that aids in the elimination of pathogens. Complement C5 precursor contains C5 α anaphylatoxin. C3 α and C5 α secretion correlates with pathophysiological phenotypes such as asthma and bacterial meningitis. Binding of these proteins to their respective G protein-coupled receptors (C3 α R, C5 α R), which are present on the surface of myeloid leukocytes, induces proinflammatory events such as cellular degranulation, smooth muscle contraction, arachidonic acid metabolism, cytokine release, leukocyte activation and cellular chemotaxis. C5 α R utilizes the Ras-Raf-ERK1/2 cascade, couples to G_i/G₁₆ proteins, and is prevalent on the surface of hepatocyte, lung, smooth muscle and endothelial cells. Upon activation, C3 α R and C5 α R are susceptible to rapid GRK-mediated phosphorylation and Clathrin-coated vesicle targeting. The C5 precursor is first processed by the removal of four basic residues, forming two chains, β and α , linked by a disulfide bond. C5 convertase activates C5 by cleaving the α chain, releasing C5 α anaphylatoxin and generating C5 β .

REFERENCES

1. de Bruijn, M.H. and Fey, G.H. 1985. Human complement component C3: cDNA coding sequence and derived primary structure. *Proc. Natl. Acad. Sci. USA* 82: 708-712.
2. Buhl, A.M., Osawa, S. and Johnson, G.L. 1995. Mitogen-activated protein kinase activation requires two signal inputs from the human anaphylatoxin C5 α receptor. *J. Biol. Chem.* 270: 19828-19832.
3. Stahel, P.F., Frei, K., Eugster, H.P., Fontana, A., Hummel, K.M., Wetsel, R.A., Ames, R.S. and Barnum, S.R. 1997. TNF α -mediated expression of the receptor for anaphylatoxin C5 α on neurons in experimental *Listeria meningoenzephalitis*. *J. Immunol.* 159: 861-869.
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5. Settmacher, B., Bock, D., Saad, H., Gartner, S., Rheinheimer, C., Kohl, J., Bautsch, W. and Klos, A. 1999. Modulation of C3 α activity: internalization of the human C3 α receptor and its inhibition by C5 α . *J. Immunol.* 162: 7409-7416.

CHROMOSOMAL LOCATION

Genetic locus: C5 (human) mapping to 9q33.2; Hc (mouse) mapping to 2 B.

SOURCE

C5 α (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of C5 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-21940 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

C5 α (S-16) is recommended for detection of C5 precursor, C5 α chain and C5 α' chain of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 C5 siRNA (h): sc-42848, C5 siRNA (m): sc-42849, C5 shRNA Plasmid (h): sc-42848-SH, C5 shRNA Plasmid (m): sc-42849-SH, C5 shRNA (h) Lentiviral Particles: sc-42848-V and C5 shRNA (m) Lentiviral Particles: sc-42849-V.

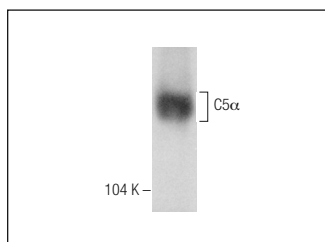
Molecular Weight of C5 precursor: 188 kDa.

Molecular Weight of C5 α : 125 kDa.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



C5 α (S-16): sc-21940. Western blot analysis of C5 α expression in rat plasma.

RESEARCH USE

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