

C3aR (E-18): sc-14625

BACKGROUND

Complement C3 precursor contains complement C3 β chain, complement C3 α chain, C3a anaphylatoxin, complement C3b α chain, complement C3c fragment, complement C3dg fragment, complement C3g fragment, complement C3d fragment and complement C3f fragment. C3a, C4a, and C5a 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. C3a and C5a secretion correlates with pathophysiological phenotypes such as asthma and bacterial meningitis. Binding of these proteins to their respective G protein-coupled receptors (C3aR, C5aR), 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. C3aR is expressed in brain and activated B-lymphocytes whereas C5aR is prevalent on the surface of hepatocyte, lung, smooth muscle, and endothelial cells. Upon activation, C3aR and C5aR are susceptible to rapid GRK-mediated phosphorylation and clathrin-coated vesicle targeting. C5aR utilizes the Ras-Raf-ERK1/2 cascade and couples to G_i/G16 proteins.

REFERENCES

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- Buhl, A.M., et al. 1995. Mitogen-activated protein kinase activation requires two signal inputs from the human anaphylatoxin C5a receptor. *J. Biol. Chem.* 270: 19828-19832.
- Stahel, P.F., et al. 1997. TNF α -mediated expression of the receptor for anaphylatoxin C5a on neurons in experimental *Listeria meningoencephalitis*. *J. Immunol.* 159: 861-869.
- Settmacher, B., et al. 1999. Modulation of C3a activity: internalization of the human C3a receptor and its inhibition by C5a. *J. Immunol.* 162: 7409-7416.
- Langkabel, P., et al. 1999. Ligand-induced phosphorylation of anaphylatoxin receptors C3aR and C5aR is mediated by G protein-coupled receptor kinases. *Eur. J. Immunol.* 29: 3035-3046.
- Humbles, A.A., et al. 2000. A role for the C3a anaphylatoxin receptor in the effector phase of asthma. *Nature* 406: 998-1001.

CHROMOSOMAL LOCATION

Genetic locus: C3ar1 (mouse) mapping to 6 F1.

SOURCE

C3aR (E-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of C3aR of mouse 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-14625 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

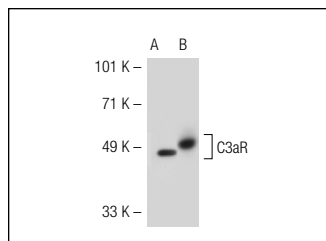
C3aR (E-18) is recommended for detection of C3a receptor of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 C3aR siRNA (m): sc-42841, C3aR shRNA Plasmid (m): sc-42841-SH and C3aR shRNA (m) Lentiviral Particles: sc-42841-V.

Molecular Weight of C3aR: 65 kDa.

Positive Controls: MH-S whole cell lysate.

DATA



C3aR (E-18): sc-14625. Western blot analysis of C3aR expression in non-transfected: sc-117752 (A) and mouse C3aR transfected: sc-118915 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

- Chen, N.J., et al. 2007. C5L2 is critical for the biological activities of the anaphylatoxins C5a and C3a. *Nature* 446: 203-207.

RESEARCH USE

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

MONOS
Satisfaction
Guaranteed

Try **C3aR (D-12): sc-133172** or **C3aR (74): sc-53785**, our highly recommended monoclonal alternatives to C3aR (E-18).