SANTA CRUZ BIOTECHNOLOGY, INC.

C3aR (D-20): sc-14624

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

Genetic locus: C3ar1 (mouse) mapping to 6 F2.

SOURCE

C3aR (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of C3aR 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.

Blocking peptide available for competition studies, sc-14624 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

C3aR (D-20) 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 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 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: NIH/3T3 whole cell lysate: sc-2210 or M1 whole cell lysate: sc-364782.

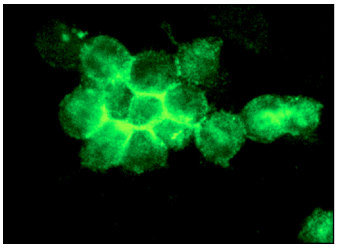
STORAGE

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.

DATA



C3aR (D-20): sc-14624. Immunofluorescence staining of methanol-fixed MH-S cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Chen, N.J., et al. 2007. C5L2 is critical for the biological activities of the anaphylatoxins C5a and C3a. Nature 446: 203-207.
2. Mizutani, N., et al. 2009. Complement C3a regulates late asthmatic response and airway hyperresponsiveness in mice. J. Immunol. 183: 4039-4046.
3. Shinjyo, N., et al. 2009. Complement-derived anaphylatoxin C3a regulates *in vitro* differentiation and migration of neural progenitor cells. Stem Cells 27: 2824-2832.
4. Mizutani, N., et al. 2012. Establishment and characterization of a murine model for allergic asthma using allergen-specific IgE monoclonal antibody to study pathological roles of IgE. Immunol. Lett. 141: 235-245.
5. Lara-Astiaso, D., et al. 2012. Complement anaphylatoxins C3a and C5a induce a failing regenerative program in cardiac resident cells. Evidence of a role for cardiac resident stem cells other than cardiomyocyte renewal. Springerplus 1: 63.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.