

C3 (2898): sc-52629

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

1. de Bruijn, M.H., et al. 1985. Human complement component C3: cDNA coding sequence and derived primary structure. *Proc. Natl. Acad. Sci. USA* 82: 708-712.
2. 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.
3. 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.
4. 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.
5. 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.
6. 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: C3 (human) mapping to 19p13.3.

SOURCE

C3 (2898) is a mouse monoclonal antibody raised against the C-terminus of C3 of human origin.

PRODUCT

Each vial contains 100 μ g IgG₁ in 1.0 ml of PBS (0.2 μ m filtered) with 0.1% stabilizer protein and 0.02% sodium azide.

APPLICATIONS

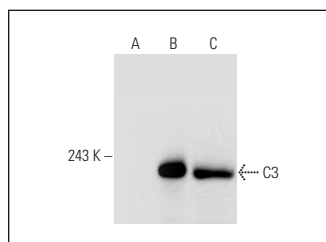
C3 (2898) is recommended for detection of the C-terminus of C3a and intact C3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for C3 siRNA (h): sc-37068, C3 shRNA Plasmid (h): sc-37068-SH and C3 shRNA (h) Lentiviral Particles: sc-37068-V.

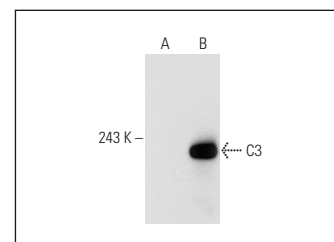
Molecular Weight of C3: 180 kDa.

Positive Controls: C3 (h): 293T Lysate: sc-112683 or Hep G2 cell lysate: sc-2227.

DATA



C3 (2898): sc-52629. Western blot analysis of C3 expression in non-transfected 293T: sc-117752 (A), human C3 transfected 293T: sc-112683 (B) and Hep G2 (C) whole cell lysates.



C3 (2898): sc-52629. Western blot analysis of C3 expression in non-transfected: sc-117752 (A) and human C3 transfected: sc-112683 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Pang, T., et al. 2013. Transient limb ischemia alters serum protein expression in healthy volunteers: complement C3 and vitronectin may be involved in organ protection induced by remote ischemic preconditioning. *Oxid. Med. Cell. Longev.* 2013: 859056.
2. Canales, N.A., et al. 2014. A1BG and C3 are overexpressed in patients with cervical intraepithelial neoplasia III. *Oncol. Lett.* 8: 939-947.
3. Efsthathiou, N.E., et al. 2020. Acadesine suppresses TNF- α induced complement component 3 (C3), in retinal pigment epithelial (RPE) cells. *PLoS ONE* 15: e0244307.

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.



See **C3 (B-9): sc-28294** for C3 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.