

# C3 (h): 293T Lysate: sc-112683

## BACKGROUND

Complement C3 precursor contains complement C3  $\beta$  chain, complement C3  $\alpha$  chain, C3a anaphylatoxin, complement C3b  $\alpha$  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  $G_i/G_{16}$  proteins.

## 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 C5a 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 $\alpha$ -mediated expression of the receptor for anaphylatoxin C5a on neurons in experimental *Listeria* meningoencephalitis. *J. Immunol.* 159: 861-869.
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5. Langkabel, P., Zwirner, J. and Oppermann, M. 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., Lu, B., Nilsson, C.A., Lilly, C., Israel, E., Fujiwara, Y., Gerard, N.P. and Gerard, C. 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.

## PRODUCT

C3 (h): 293T Lysate represents a lysate of human C3 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## RESEARCH USE

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

## APPLICATIONS

C3 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive C3 antibodies. Recommended use: 10-20  $\mu$ l per lane.

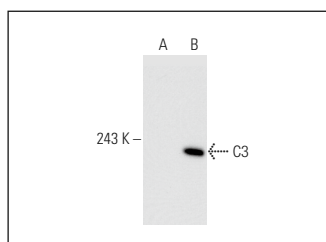
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

C3 (A-4): sc-55458 is recommended as a positive control antibody for Western Blot analysis of enhanced human C3 expression in C3 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

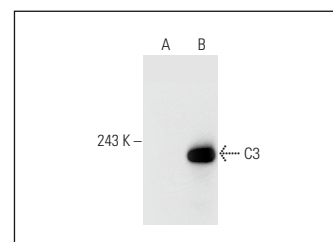
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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.

## DATA



C3 (A-4): sc-55458. Western blot analysis of C3 expression in non-transfected: sc-117752 (A) and human C3 transfected: sc-112683 (B) 293T 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.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.