SANTA CRUZ BIOTECHNOLOGY, INC.

C5β (E-8): sc-398247

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

C3α, C4α and C5α 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 C5α anaphylatoxin. C3α and C5α secretion correlates with pathophysiological phenotypes such as asthma and bacterial meningitis. Binding of these proteins to their respective G protein-coupled receptors (C3αR, C5αR), 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. C5αR utilizes the Ras-Raf-ERK1/2 cascade, couples to G_i/G_{16} proteins, and is prevalent on the surface of hepatocyte, lung, smooth muscle and endothelial cells. Upon activation, C3αR and C5αR 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, α and β, linked by a disulfide bond. C5 convertase activates C5 by cleaving the α chain, releasing C5α anaphylatoxin and generating C5β.

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., et al. 1995. Mitogen-activated protein kinase activation requires two signal inputs from the human anaphylatoxin C5α 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.

CHROMOSOMAL LOCATION

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

SOURCE

C5β (E-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 562-589 within an internal region of C5 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

C5β (E-8) is available conjugated to agarose (sc-398247 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to either phycoerythrin (sc-398247 PE), fluorescein (sc-398247 FITC), Alexa Fluor® 488 (sc-398247 AF488), Alexa Fluor® 546 (sc-398247 AF546), Alexa Fluor® 594 (sc-398247 AF594) or Alexa Fluor® 647 (sc-398247 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-398247 AF680) or Alexa Fluor® 790 (sc-398247 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-398247 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

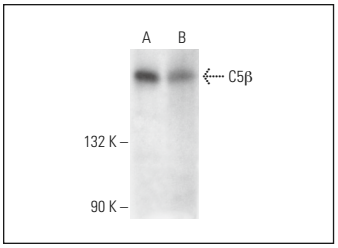
C5β (E-8) is recommended for detection of C5 precursor and β chain of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, 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 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 C5β: 189 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or human liver extract: sc-363766.

DATA



C5β (E-8): sc-398247. Western blot analysis of C5β expression in Hep G2 whole cell lysate (**A**) and human liver tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Feng, P., et al. 2021. Early pregnancy regulates expression of complement components in ovine liver. Anim. Sci. J. 92: e13660.
2. Zhang, L., et al. 2022. Complement regulation in ovine lymph nodes during early pregnancy. Exp. Ther. Med. 23: 166.
3. Zhang, L., et al. 2022. Effects of early pregnancy on the complement system in the ovine thymus. Vet. Res. Commun. 46: 137-145.
4. Han, X., et al. 2022. Selection of early pregnancy specific proteins and development a rapid immunochromatographic test strip in cows. Theriogenology 187: 127-134.

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.