SANTA CRUZ BIOTECHNOLOGY, INC.

C5b-9 (2A1): sc-66190

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The complement component proteins: C2, C3, C4 and C5 are potent anaphylatoxins that are released during complement activation. Binding of these proteins to their respective G protein-coupled receptors, C3aR, C1R and C5aR, induces proinflammatory events, such as cellular degranulation, smooth muscle contraction, arachidonic acid metabolism, cytokine release, leukocyte activation and cellular chemotaxis. Activation of the complement system leads to the formation of C5b-9 terminal complex, and while C5b-9 can promote cell lysis, the sublytic assembly of C5b-9 on plasma membranes causes an opposite result and induces cell cycle activation and survival. C5b-9 can rescue oligodendrocytes from FAS-mediated apoptosis by regulating caspase-8 processing via PI 3-K signaling. C5b-9 may play a pro-inflammatory role in the acute phase of multiple sclerosis, but may also be neuroprotective during the chronic phase of the disease.

REFERENCES

1. Cybulsky, A.V., et al. 1999. Complement C5b-9 induces receptor tyrosine kinase transactivation in glomerular epithelial cells. Am. J. Pathol. 155: 1701-1711.
2. Soane, L., et al. 1999. Inhibition of oligodendrocyte apoptosis by sublytic C5b-9 is associated with enhanced synthesis of Bcl-2 and mediated by inhibition of caspase-3 activation. J. Immunol. 163: 6132-6138.
3. Montinaro, V., et al. 2000. Renal C3 synthesis in idiopathic membranous nephropathy: correlation to urinary C5b-9 excretion. Kidney Int. 57: 137-146.

SOURCE

C5b-9 (2A1) is a mouse monoclonal antibody raised against purified C5b-9 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

C5b-9 (2A1) is available conjugated to agarose (sc-66190 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-66190 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-66190 PE), fluorescein (sc-66190 FITC), Alexa Fluor® 488 (sc-66190 AF488), Alexa Fluor® 546 (sc-66190 AF546), Alexa Fluor® 594 (sc-66190 AF594) or Alexa Fluor® 647 (sc-66190 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-66190 AF680) or Alexa Fluor® 790 (sc-66190 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

C5b-9 (2A1) is recommended for detection of a neoantigen of the C5b-9 complex of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

SELECT PRODUCT CITATIONS

1. Lonigro, A. and Devaux, J.J. 2009. Disruption of neurofascin and gliomedin at nodes of Ranvier precedes demyelination in experimental allergic neuritis. Brain 132: 260-273.
2. Rostami, E., et al. 2013. The complement terminal pathway is activated in focal penetrating but not in mild diffuse traumatic brain injury. J. Neurotrauma 30: 1954-1965.
3. Mulfaul, K., et al. 2020. Toll-like receptor 2 facilitates oxidative damage-induced retinal degeneration. Cell Rep. 30: 2209-2224.
4. Chen, D., et al. 2020. The lipid elongation enzyme ELOVL2 is a molecular regulator of aging in the retina. Aging Cell 19: e13100.
5. Lin, J., et al. 2021. Cross-reactive antibodies against dust mite-derived enolase induce neutrophilic airway inflammation. Eur. Respir. J. 57: 1902375.
6. Wang, X., et al. 2021. Sanqi oral solution mitigates proteinuria in rat passive Heymann nephritis and blocks podocyte apoptosis via Nrf2/HO-1 pathway. Front. Pharmacol. 12: 727874.
7. Zhang, L., et al. 2022. C-reactive protein inhibits C3a/C3aR-dependent podocyte autophagy in favor of diabetic kidney disease. FASEB J. 36: e22332.
8. Wang, F., et al. 2022. Membrane attack complex C5b-9 promotes renal tubular epithelial cell pyroptosis in trichloroethylene-sensitized mice. Front. Pharmacol. 13: 877988.
9. Guo, J., et al. 2022. Acteoside attenuates acute lung injury following administration of cobra venom factor to mice. Heliyon 8: e11622.
10. Tang, X., et al. 2023. Phospholipase A_2 induces acute kidney injury by complement mediated mitochondrial apoptosis via TNF-α/NFκB signaling pathway. Food Chem. Toxicol. 172: 113591.
11. Wei, J.A., et al. 2023. Physical exercise modulates the microglial complement pathway in mice to relieve cortical circuitry deficits induced by mutant human TDP-43. Cell Rep. 42: 112240.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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