SANTA CRUZ BIOTECHNOLOGY, INC.

Cingulin (G-6): sc-365264

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Diffusion of solutes is prevented across certain barriers by the formation of tight junction seals. Occludin and Cingulin interact with other proteins to direct the formation and regulation of tight junctions. Cingulin, a protein component of the submembrane plaque of tight junctions (TJ), contains globular and coiled-coil domains and interacts *in vitro* with several TJ and cytoskeletal proteins, including the PDZ protein ZO-1. Cingulin binding has also been shown to inhibit RhoA activation and signaling with increased Cingulin expression in confluent cells, causing downregulation of RhoA by inhibiting GEF-H1/Lfc.

CHROMOSOMAL LOCATION

Genetic locus: CGN (human) mapping to 1q21.3.

SOURCE

Cingulin (G-6) is a mouse monoclonal antibody raised against amino acids 821-1000 mapping near the C-terminus of Cingulin 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.

Cingulin (G-6) is available conjugated to agarose (sc-365264 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365264 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365264 PE), fluorescein (sc-365264 FITC), Alexa Fluor® 488 (sc-365264 AF488), Alexa Fluor® 546 (sc-365264 AF546), Alexa Fluor® 594 (sc-365264 AF594) or Alexa Fluor® 647 (sc-365264 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365264 AF680) or Alexa Fluor® 790 (sc-365264 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cingulin (G-6) is recommended for detection of Cingulin of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Cingulin (G-6) is also recommended for detection of Cingulin in additional species, including canine.

Suitable for use as control antibody for Cingulin siRNA (h): sc-45677, Cingulin shRNA Plasmid (h): sc-45677-SH and Cingulin shRNA (h) Lentiviral Particles: sc-45677-V.

Molecular Weight of Cingulin: 140-160 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204 or MDCK cell lysate: sc-2252.

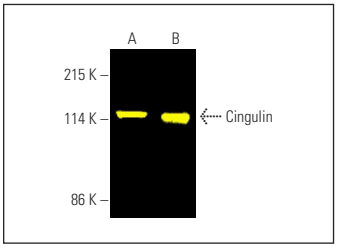
RESEARCH USE

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

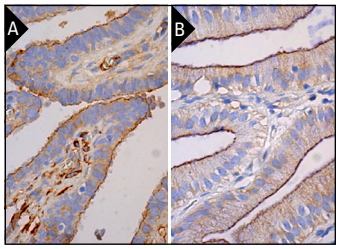
STORAGE

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

DATA



Cingulin (G-6) Alexa Fluor® 488: sc-365264 AF488. Direct fluorescent western blot analysis of Cingulin expression in Jurkat (**A**) and MDCK (**B**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214.



Cingulin (G-6): sc-365264. Immunoperoxidase staining of formalin fixed, paraffin-embedded human fallopian tube tissue showing apical membrane and cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing apical membrane staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ducommun, S., et al. 2015. Motif affinity and mass spectrometry proteomic approach for the discovery of cellular AMPK targets: identification of mitochondrial fission factor as a new AMPK substrate. Cell. Signal. 27: 978-988.
2. Tian, Y., et al. 2016. Role of Cingulin in agonist-induced vascular endothelial permeability. J. Biol. Chem. 291: 23681-23692.
3. Batissoco, A.C., et al. 2018. A cell junctional protein network associated with Connexin-26. Int. J. Mol. Sci. 19: 2535.
4. Lahav-Ariel, L., et al. 2019. Striatin is a novel modulator of cell adhesion. FASEB J. 33: 4729-4740.
5. Saito, A.C., et al. 2021. Occludin and tricellulin facilitate formation of anastomosing tight-junction strand network to improve barrier function. Mol. Biol. Cell 32: 722-738.
6. Sebastián, I., et al. 2021. Disassembly of the apical junctional complex during the transmigration of *Leptospira interrogans* across polarized renal proximal tubule epithelial cells. Cell. Microbiol. 23: e13343.
7. Haas, A.J., et al. 2022. ZO-1 guides tight junction assembly and epithelial morphogenesis via cytoskeletal tension-dependent and -independent functions. Cells 11: 3775.
8. Zhu, G.J., et al. 2023. Cingulin regulates hair cell cuticular plate morphology and is required for hearing in human and mouse. EMBO Mol. Med. 15: e17611.

PROTOCOLS

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