

# Cingulin (N-12): sc-46574

## 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.

## REFERENCES

1. D'Atri, F., et al. 2001. Cingulin interacts with F-Actin *in vitro*. FEBS Lett. 507: 21-24.
2. D'Atri, F., et al. 2002. Evidence for a functional interaction between Cingulin and ZO-1 in cultured cells. J. Biol. Chem. 277: 27757-27764.
3. Bordin, M., et al. 2004. Histone deacetylase inhibitors up-regulate the expression of tight junction proteins. Mol. Cancer Res. 2: 692-701.
4. Guillemot, L., et al. 2004. Disruption of the Cingulin gene does not prevent tight junction formation but alters gene expression. J. Cell Sci. 117: 5245-5256.
5. Umeda, K., et al. 2004. Establishment and characterization of cultured epithelial cells lacking expression of ZO-1. J. Biol. Chem. 279: 44785-44794.
6. Ajijaz, S., et al. 2005. Binding of GEF-H1 to the tight junction-associated adaptor Cingulin results in inhibition of Rho signaling and G<sub>1</sub>/S phase transition. Dev. Cell 8: 777-786.

## CHROMOSOMAL LOCATION

Genetic locus: CGN (human) mapping to 1q21.3; Cgn (mouse) mapping to 3 F2.1.

## SOURCE

Cingulin (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Cingulin of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-46574 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Cingulin (N-12) is recommended for detection of Cingulin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Cingulin (N-12) is also recommended for detection of Cingulin in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Cingulin siRNA (h): sc-45677, Cingulin siRNA (m): sc-45678, Cingulin shRNA Plasmid (h): sc-45677-SH, Cingulin shRNA Plasmid (m): sc-45678-SH, Cingulin shRNA (h) Lentiviral Particles: sc-45677-V and Cingulin shRNA (m) Lentiviral Particles: sc-45678-V.

Molecular Weight of Cingulin: 140-160 kDa.

Positive Controls: MDCK cell lysate: sc-2252.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## PROTOCOLS

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

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