

# Occludin (Y-12): sc-27151

## BACKGROUND

Occludin is an integral membrane protein closely associated with the tight junctions of epithelial and endothelial cells. Occludin is a tetraspan integral membrane protein in epithelial and endothelial tight junction (TJ) structures that can contain two extracellular loops. The protein exists in a variety of phosphorylated forms. Phosphorylation is involved in regulating both the localization and the function of occludin. Expression of occludin is up-regulated by poly-unsaturated fatty acids, increasing transendothelial cell resistance and reducing cellular permeability to large molecules. The level of occludin varies greatly depending on tissue; in brain tissue, occludin is highly expressed at cell-cell contact sites. Non-neural tissues show lower expression and discontinuous distribution. Up-regulation of epithelial occludin may play a role in enhancing paracellular permeability and be related to the damage to the tight junction.

## REFERENCES

1. Furuse, M., et al. 1993. Occludin: a novel integral membraneprotein localizing at tight junctions. *J. Cell Biol.* 123: 1777-1788.
2. Tsukita, S., et al. 1996. Molecular dissection of tight junctions. *Cell Struct. Funct.* 21: 381-385.
3. Hirase, T., et al. 1997. Occludin as a possible determinant of tight junction permeability in endothelial cells. *J. Cell Sci.* 110: 1603-1613.
4. Sakakibara, A., et al. 1997. Possible involvement of phosphorylation of occludin in tight junction formation. *J. Cell Biol.* 137: 1393-1401.
5. Wong, V. 1997. Phosphorylation of occludin correlates with occludin localization and function at the tight junction. *Am. J. Physiol.* 273: 1859-1867.
6. Jiang, W.G., et al. 1998. Regulation of tight junction permeability and occludin expression by poly-unsaturated fatty acids. *Biochem. Biophys. Res. Commun.* 244: 414-420.

## CHROMOSOMAL LOCATION

Genetic locus: OCLN (human) mapping to 5q13.2; Ocln (mouse) mapping to 13 D1.

## SOURCE

Occludin (Y-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of Occludin of mouse 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-27151 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.

## APPLICATIONS

Occludin (Y-12) is recommended for detection of Occludin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

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

Suitable for use as control antibody for Occludin siRNA (h): sc-36117, Occludin siRNA (m): sc-36118, Occludin shRNA Plasmid (h): sc-36117-SH, Occludin shRNA Plasmid (m): sc-36118-SH, Occludin shRNA (h) Lentiviral Particles: sc-36117-V and Occludin shRNA (m) Lentiviral Particles: sc-36118-V.

Molecular Weight of Occludin: 60-82 kDa.

Positive Controls: COLO 320DM cell lysate: sc-2226, ECV304 cell lysate: sc-2269 or HeLa whole cell lysate: sc-2200.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## SELECT PRODUCT CITATIONS

1. McCaffrey, G., et al. 2007. Tight junctions contain oligomeric protein assembly critical for maintaining blood-brain barrier integrity *in vivo*. *J. Neurochem.* 103: 2540-2555.
2. Elali, A., et al. 2011. Liver X receptor activation enhances blood-brain barrier integrity in the ischemic brain and increases the abundance of ATP-binding cassette transporters ABCB1 and ABCC1 on brain capillary cells. *Brain Pathol.* 22: 175-187.

## RESEARCH USE

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



Try **Occludin (E-5): sc-133256** or **Occludin (F-11): sc-133255**, our highly recommended monoclonal alternatives to Occludin (Y-12). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **Occludin (E-5): sc-133256**.