

# Occludin (F-7): sc-271842

## 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 upregulated by polyunsaturated 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 membrane protein 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Occludin (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-27 at the N-terminus of Occludin of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Occludin (F-7) is available conjugated to agarose (sc-271842 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271842 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271842 PE), fluorescein (sc-271842 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271842 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271842 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271842 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271842 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271842 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271842 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271842 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

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

## APPLICATIONS

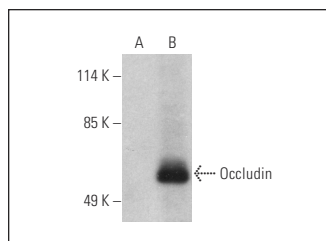
Occludin (F-7) is recommended for detection of Occludin of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). Occludin (F-7) is also recommended for detection of Occludin in additional species, including equine 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.

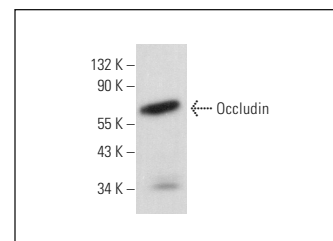
Molecular Weight of Occludin: 60-82 kDa.

Positive Controls: Occludin (h): 293T Lysate: sc-114467, Caco-2 cell lysate: sc-2262 or ECV304 cell lysate: sc-2269.

## DATA



Occludin (F-7) HRP: sc-271842 HRP. Direct western blot analysis of Occludin expression in non-transfected: sc-117752 (A) and human Occludin transfected: sc-114467 (B) 293T whole cell lysates.



Occludin (F-7): sc-271842. Western blot analysis of Occludin expression in Caco-2 whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Matta, R., et al. 2012. Knockout of Mkp-1 exacerbates colitis in IL-10-deficient mice. *Am. J. Physiol. Gastrointest. Liver Physiol.* 302: G1322-G1335.
2. Bozok Cetintas, V., et al. 2016. Effects of flavopiridol on critical regulation pathways of CD133<sup>high</sup>/CD44<sup>high</sup> lung cancer stem cells. *Medicine* 95: e5150.
3. Zhang, H.T., et al. 2017. Early VEGF inhibition attenuates blood-brain barrier disruption in ischemic rat brains by regulating the expression of MMPs. *Mol. Med. Rep.* 15: 57-64.
4. Liu, C., et al. 2018. Increased expression of tight junction protein Occludin is associated with the protective effect of mosapride against aspirin-induced gastric injury. *Exp. Ther. Med.* 15: 1626-1632.
5. Lee, H., et al. 2020. Asymptomatic *Clostridium perfringens* inhabitation in intestine can cause inflammation, apoptosis, and disorders in brain. *Foodborne Pathog. Dis.* 17: 52-65.

## RESEARCH USE

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