SANTA CRUZ BIOTECHNOLOGY, INC.

Occludin (E-5): sc-133256

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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.

CHROMOSOMAL LOCATION

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

SOURCE

Occludin (E-5) is a mouse monoclonal antibody raised against amino acids 132-411 mapping within an internal region of Occludin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Occludin (E-5) is available conjugated to agarose (sc-133256 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-133256 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-133256 PE), fluorescein (sc-133256 FITC), Alexa Fluor® 488 (sc-133256 AF488), Alexa Fluor® 546 (sc-133256 AF546), Alexa Fluor® 594 (sc-133256 AF594) or Alexa Fluor® 647 (sc-133256 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-133256 AF680) or Alexa Fluor® 790 (sc-133256 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Occludin (E-5) 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), 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).

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.

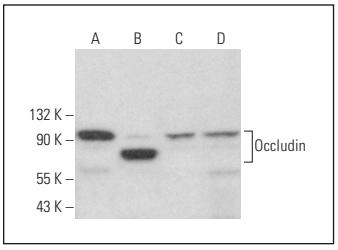
Molecular Weight of Occludin: 60-82 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, human colon extract: sc-363757 or human kidney extract: sc-363764.

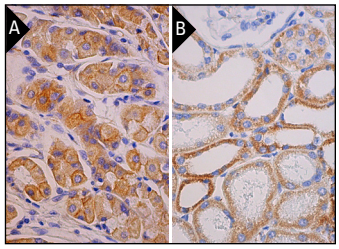
STORAGE

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

DATA



Occludin (E-5): sc-133256. Western blot analysis of Occludin expression in COLO 205 (**A**) and Hep G2 (**B**) whole cell lysates and human colon (**C**) and human kidney (**D**) tissue extracts.



Occludin (E-5): sc-133256. Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing membrane and cytoplasmic staining of glandular cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (**B**).

SELECT PRODUCT CITATIONS

1. Xu, R., et al. 2012. HIV-1 Tat protein increases the permeability of brain endothelial cells by both inhibiting Occludin expression and cleaving Occludin via matrix metalloproteinase-9. Brain Res. 1436: 13-19.
2. Lee, H.S., et al. 2013. Effect of acute stress on immune cell counts and the expression of tight junction proteins in the duodenal mucosa of rats. Gut Liver 7: 190-196.
3. Benoit, B., et al. 2014. Pasture v. standard dairy cream in high-fat diet-fed mice: improved metabolic outcomes and stronger intestinal barrier. Br. J. Nutr. 112: 520-535.
4. Benoit, B., et al. 2015. Increasing fat content from 20 to 45 wt% in a complex diet induces lower endotoxemia in parallel with an increased number of intestinal goblet cells in mice. Nutr. Res. 35: 346-356.
5. Yang, H.L., et al. 2017. Lucidone promotes the cutaneous wound healing process via activation of the PI_3K/Akt, Wnt/β-catenin and NFκB signaling pathways. Biochim. Biophys. Acta 1864: 151-168.
6. Liu, Y., et al. 2018. Memantine protects against ischemia/reperfusion-induced brain endothelial permeability. IUBMB Life 70: 336-343.
7. Cheng, D., et al. 2018. Butyrate ameliorated-NLRC3 protects the intestinal barrier in a GPR43-dependent manner. Exp. Cell Res. 368: 101-110.
8. Bar, I., et al. 2018. Silencing of casein kinase 1δ reduces migration and metastasis of triple negative breast cancer cells. Oncotarget 9: 30821-30836.
9. Diao, R., et al. 2018. *In vitro* chemokine (C-C motif) receptor 6-dependent non-inflammatory chemotaxis during spermatogenesis. Biol. Res. 51: 12.

RESEARCH USE

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