

ZO-1 (N-19): sc-8147

BACKGROUND

Tight junctions are complexes of proteins that create intercellular boundaries between the plasma membrane domains of epithelial and endothelial cells. Many of the tight junction-associated proteins are members of the membrane-associated guanylate kinase (MAGUK) family and include occludin, ZO-1, ZO-2 and ZO-3. These proteins are thought to have both structural and signaling roles and are characteristically defined by three protein-protein interaction modules: the PDZ domain, the SH3 domain and the guanylate kinase (GuK) domain. ZO-1 forms complexes with either ZO-2 or ZO-3. In addition, these proteins can also associate with claudin, Occludin and F-actin, at tight junction stands, where they provide a linkage between the actin cytoskeleton and the tight junction. ZO-1 expression is significantly reduced in many breast cancer lines. ZO-2 and ZO-3 are ubiquitously expressed within epithelial tight junctions. Unlike ZO-1, which is also expressed at cell junctions of cardiac myocytes, ZO-2 is not expressed in nonepithelial tissue.

CHROMOSOMAL LOCATION

Genetic locus: TJP1 (human) mapping to 15q13.1; Tjp1 (mouse) mapping to 7 C.

SOURCE

ZO-1 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of ZO-1 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-8147 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ZO-1 (N-19) is recommended for detection of ZO-1 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).

ZO-1 (N-19) is also recommended for detection of ZO-1 in additional species, including canine and avian.

Suitable for use as control antibody for ZO-1 siRNA (h): sc-29829, ZO-1 siRNA (m): sc-29832, ZO-1 shRNA Plasmid (h): sc-29829-SH, ZO-1 shRNA Plasmid (m): sc-29832-SH, ZO-1 shRNA (h) Lentiviral Particles: sc-29829-V and ZO-1 shRNA (m) Lentiviral Particles: sc-29832-V.

Molecular Weight of ZO-1: 220 kDa.

Positive Controls: rat testis extract: sc-2400 or rat liver extract: sc-2395.

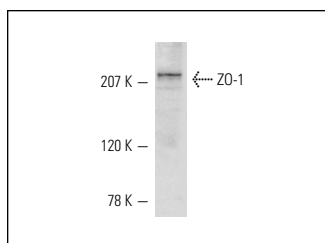
STORAGE

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.

DATA



ZO-1 (N-19): sc-8147. Western blot analysis of ZO-1 expression in rat testis extract.

SELECT PRODUCT CITATIONS

- Inanobe, A., et al. 2002. Inward rectifier K⁺ channel Kir2.3 is localized at the postsynaptic membrane of excitatory synapses. *Am. J. Physiol. Cell Physiol.* 282: 1396-1403.
- Penes, M.C., et al. 2005. Expression of zonula occludens-1 (ZO-1) and the transcription factor ZO-1-associated nucleic acid-binding protein (ZONAB)-MsY3 in glial cells and colocalization at oligodendrocyte and astrocyte gap junctions in mouse brain. *Eur. J. Neurosci.* 22: 404-418.
- Neuhaus, W., et al. 2008. Validation of *in vitro* cell culture models of the blood-brain barrier: tightness characterization of two promising cell lines. *J. Pharm. Sci.* 97: 5158-5175.
- Kaneko, Y., et al. 2012. Focal adhesion kinase localizes to sites of cell-to-cell contact *in vivo* and increases apically in rat uterine luminal epithelium and the blastocyst at the time of implantation. *J. Morphol.* 273: 639-650.
- Alcolado, N.G., et al. 2014. Cystic fibrosis transmembrane conductance regulator dysfunction in VIP knockout mice. *Am. J. Physiol., Cell Physiol.* 307: C195-C207.

PROTOCOLS

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



Try **ZO-1 (R40.76): sc-33725**, our highly recommended monoclonal alternative to ZO-1 (N-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **ZO-1 (R40.76): sc-33725**.