SANTA CRUZ BIOTECHNOLOGY, INC.

ZO-2 (R-19): sc-8148

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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, and unlike ZO-1, which is also expressed at cell junctions of cardiac myocytes, ZO-2 is not expressed in nonepithelial tissue.

REFERENCES

1. Furuse, M., et al. 1994. Direct association of Occludin with ZO-1 and its possible involvement in the localization of Occludin at tight junctions. J. Cell Biol. 127: 1617-1626.
2. Anderson, J.M. 1996. Cell signalling: MAGUK magic. Curr. Biol. 6: 382-384.
3. Haskins, J., et al. 1998. ZO-3, a novel member of the MAGUK protein family found at the tight junction, interacts with ZO-1 and Occludin. J. Cell Biol. 141: 199-208.
4. Hoover, K.B., et al. 1998. Loss of the tight junction MAGUK ZO-1 in breast cancer: relationship to glandular differentiation and loss of heterozygosity. Am. J. Pathol. 153: 1767-1773.
5. Itoh, M., et al. 1999. Characterization of ZO-2 as a MAGUK family member associated with tight as well as adherens junctions with a binding affinity to Occludin and α-catenin. J. Biol. Chem. 274: 5981-5986.
6. Wittchen, E.S., et al. 1999. Protein interactions at the tight junction. Actin has multiple binding partners, and ZO-1 forms independent complexes with ZO-2 and ZO-3. J. Biol. Chem. 274: 35179-35185.

CHOMOSOMAL LOCATION

Genetic locus: TJP2 (human) mapping to 9q21.11; Tjp2 (mouse) mapping to 19 B.

SOURCE

ZO-2 (R-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of ZO-2 of rat 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-8148 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ZO-2 (R-19) is recommended for detection of ZO-2 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).

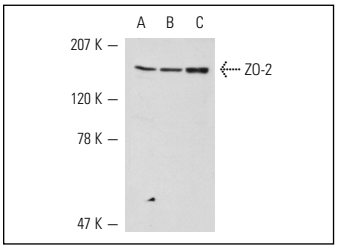
ZO-2 (R-19) is also recommended for detection of ZO-2 in additional species, including equine, canine and porcine.

Suitable for use as control antibody for ZO-2 siRNA (h): sc-29833, ZO-2 siRNA (m): sc-29926, ZO-2 shRNA Plasmid (h): sc-29833-SH, ZO-2 shRNA Plasmid (m): sc-29926-SH, ZO-2 shRNA (h) Lentiviral Particles: sc-29833-V and ZO-2 shRNA (m) Lentiviral Particles: sc-29926-V.

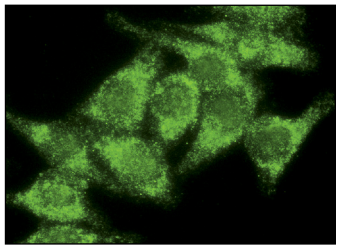
Molecular Weight of ZO-2: 160 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, rat cerebellum extract: sc-2398 or A-431 whole cell lysate: sc-2201.

DATA



ZO-2 (R-19): sc-8148. Western blot analysis of ZO-2 expression in HeLa (**A**), A-431 (**B**) and MDCK (**C**) whole cell lysates.



ZO-2 (R-19): sc-8148. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

1. Talhouk, R.S., et al. 2008. Heterocellular interaction enhances recruitment of α and β-catenins and ZO-2 into functional gap-junction complexes and induces gap junction-dependant differentiation of mammary epithelial cells. Exp. Cell Res. 314: 3275-3291.

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.