

# ZO-2 (C-16): sc-12386



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  $\alpha$  catenin. *J. Biol. Chem.* 274: 5981-5986.

## CHROMOSOMAL LOCATION

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

## SOURCE

ZO-2 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of ZO-2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12386 P, (100  $\mu$ g 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

ZO-2 (C-16) 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  $\mu$ g per 100-500  $\mu$ g 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 (C-16) is also recommended for detection of ZO-2 in additional species, including 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.

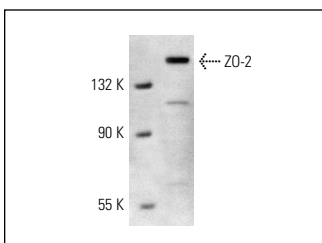
Molecular Weight of ZO-2: 160 kDa.

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

## 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.

## DATA



ZO-2 (C-16): sc-12386. Western blot analysis of ZO-2 expression in HeLa whole cell lysate.

## RESEARCH USE

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

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Try **ZO-2 (E-3): sc-515115** or **ZO-2 (E-5): sc-514557**, our highly recommended monoclonal alternatives to ZO-2 (C-16).