SANTA CRUZ BIOTECHNOLOGY, INC.

ZO-2 (E-3): sc-515115

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.

CHROMOSOMAL LOCATION

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

SOURCE

ZO-2 (E-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 789-813 at the C-terminus of ZO-2 of rat origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515115 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

ZO-2 (E-3) is recommended for detection of ZO-2 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).

ZO-2 (E-3) is also recommended for detection of ZO-2 in additional species, including canine.

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.

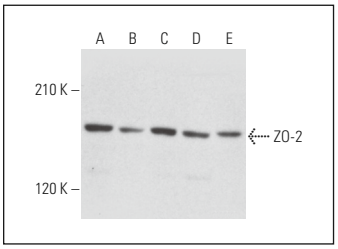
Molecular Weight of ZO-2: 160 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A-431 whole cell lysate: sc-2201 or NIH/3T3 whole cell lysate: sc-2210.

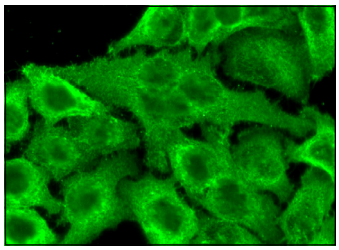
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



ZO-2 (E-3): sc-515115. Western blot analysis of ZO-2 expression in HeLa (**A**), MDCK (**B**), A-431 (**C**), NIH/3T3 (**D**) and PC-12 (**E**) whole cell lysates.



ZO-2 (E-3): sc-515115. Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and membrane localization.

SELECT PRODUCT CITATIONS

1. Choi, E.K., et al. 2019. Impact of dietary manganese on experimental colitis in mice. FASEB J. 34: 2929-2943.
2. Wei, F., et al. 2020. Osteopontin-loaded PLGA nanoparticles enhance the intestinal mucosal barrier and alleviate inflammation via the NFκB signaling pathway. Colloids Surf. B Biointerfaces 190: 110952.
3. Hu, W., et al. 2021. Alterations in the gut microbiota and metabolic profiles coincide with intestinal damage in mice with a bloodborne *Candida albicans* infection. Microb. Pathog. 154: 104826.
4. Srivastava, R.K., et al. 2022. Role of hair follicles in the pathogenesis of arsenical-induced cutaneous damage. Ann. N.Y. Acad. Sci. 1515: 168-183.
5. Mararajah, S., et al. 2024. *Chlorophytum borivilianum* aqueous root extract prevents deterioration of testicular function in mice and preserves human sperm function in hydrogen peroxide (H_2O_2)-induced oxidative stress. J. Ethnopharmacol. 318: 117026.

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.

PROTOCOLS

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