**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 characterized by defined 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 0.2% stabilizer protein.

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 1:100-1:300).

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


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-IgG BP-HRP: sc-516102 or m-IgG 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 agaroose/2.0 ml). 3) Immunofluorescence: use m-IgG BP-FITC: sc-516140 or m-IgG 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), M05K (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**


**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.