Technical Data Sheet

Purified Mouse Anti-Human ZO-1

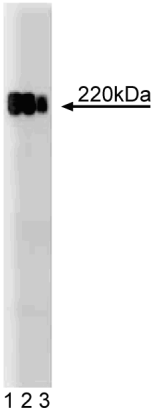
Product Information

Material Number:	**610966**
Size:	50 µg
Concentration:	250 µg/ml
Clone:	1/ZO-1
Immunogen:	Human ZO-1 aa. 1048-1247
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human
Target MW:	220 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

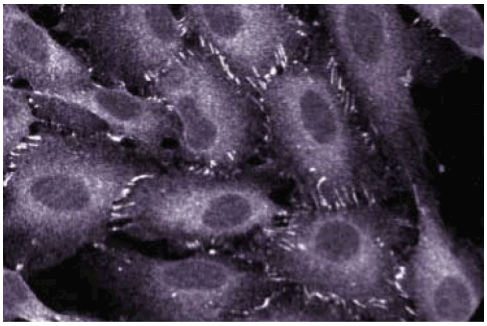
Description

Tight junctions (**z**onulae **o**ccludens) are critical to the maintenance of cell polarity and intracellular barriers between epithelial and endothelial cells. Protein components of the tight junctions include actin filaments, symplekin, occludin, Rab3B, AF-6, 7H6, ZO-1, and ZO-2. Analysis of ZO-1 and -2 resulted in their inclusion in the MAGUK protein family. This family also includes the discs large tumor suppressor protein (Dlg-A) of *Drosophila*; p55, an erythrocyte membrane protein; and PSD-95/SAP90, a synaptic membrane protein. All family members contain a region homologous to guanylate kinase (GuK), a src homology (SH3) domain, and multiple PDZ domains. Through these elements, MAGUK proteins function in signal transduction and, possibly, tumor suppression. ZO-1 is a peripheral membrane phosphoprotein that binds to other tight junction proteins such as occludin and AF-6. Via its SH3 domain, ZO-1 interacts with a serine protein kinase that phosphorylates a region immediately C-terminal of the SH3 domain. Taken together, these data indicate that ZO-1 is a critical element in the formation of tight junctions and may also serve an important role in signaling and tumor suppression.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



Western blot analysis of ZO-1 on a HeLa cell lysate.
Lane 1: 1:250, lane 2: 1:500, lane 3: 1:1000 dilution of the anti- ZO-1 antibody.



Immunofluorescent staining of EAHY human endothelial cells.

Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.
Store undiluted at -20° C.

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Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Suggested Companion Products

Catalog Number	Name	Size	Clone
611449	HeLa Cell Lysate	500 µg	(none)
554002	HRP Goat Anti-Mouse Igs	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Igs	0.5 mg	Polyclonal

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

References

Ebnet K, Schulz CU, Meyer Zu Brickwedde MK, Pendl GG, Vestweber D. Junctional adhesion molecule interacts with the PDZ domain-containing proteins AF-6 and ZO-1. *J Biol Chem.* 2000; 275(36):27979-27988.(Clone-specific: Western blot)

Hirase T, Kawashima S, Wong EY, et al. Regulation of tight junction permeability and occludin phosphorylation by Rhoa-p160ROCK-dependent and -independent mechanisms. *J Biol Chem.* 2001; 276(13):10423-10431.(Clone-specific: Western blot)

Nix SL, Chishti AH, Anderson JM, Walther Z. hCASK and hDlg associate in epithelia, and their src homology 3 and guanylate kinase domains participate in both intramolecular and intermolecular interactions. *J Biol Chem.* 2000; 275(52):41192-41200.(Clone-specific: Immunoprecipitation)

Willott E, Balda MS, Fanning AS, Jameson B, Van Itallie C, Anderson JM. The tight junction protein ZO-1 is homologous to the Drosophila discs-large tumor suppressor protein of septate junctions. *Proc Natl Acad Sci U S A.* 1993; 90(16):7834-7838.(Biology)