

ZO-1, Mouse Monoclonal Antibody - Alexa Fluor® 488

Catalog no. 339188

(See product label for lot information)

Product Description

100 µg monoclonal antibody conjugated to Alexa Fluor® 488.

Clone/PAD: ZO1-1A12
Isotype: Mouse IgG1, k
Qty: 100 µg
Volume: 200 µL

Formulation

Supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide, and 4.5 mg/mL BSA.

Purification Method

This monoclonal antibody is highly purified from mouse ascites by protein A chromatography, before conjugation.

Applications

See www.invitrogen.com/antibodies for protocols

Immunofluorescence: 5-10 µg/mL

ELISA⁽¹⁾: 0.1-1.0 µg/mL (Un-conjugated)

Western Blotting⁽¹⁾: 1-2 µg/mL (Un-conjugated)

Each lot of this antibody is tested for specificity by immunofluorescence.

Reactivity

Species reactivity includes human (Caco-2 Cell line) and dog (MDCK cell line). Based on sequence homology, reactivity with other species is likely but has not been confirmed.

Specificity

This monoclonal antibody detects ZO-1α+ and ZO-1α- isoforms. The antibody is specific for ZO-1 proteins; cross-reactivity with the related ZO-2 protein has not been observed.

Immunogen

Human recombinant ZO-1 fusion protein encompassing amino acids 334-634.

Storage

Store reagents at 2-8°C. Light exposure should be avoided.

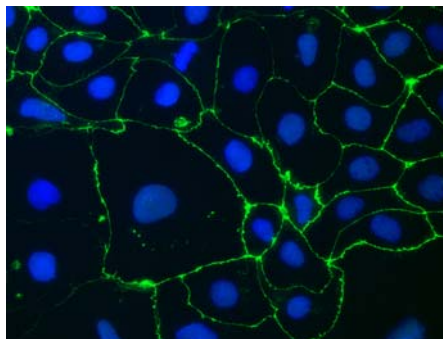
Expiration Date

Expires one year from date of receipt when stored as instructed.

| Catalog No. | Conjugation | EX (nm) | EM (nm) |
|-------------|---------------|---------|---------|
| 339100 | Un-conjugated | -- | -- |
| 339111 | FITC | 494 | 520 |
| 339188 | Alexa 488® | 495 | 519 |
| 339194 | Alexa 594® | 590 | 617 |

Background

Tight junctions (or zonula occludens) are selective, semi-permeable barriers in the paracellular pathway of vertebrate endothelia and epithelia. Tight junctions also serve to physically separate functionally and biochemically distinct regions of the plasma membrane that exist in distinct physiological compartments.⁽²⁾ ZO-1, ZO-2 and occludin are major components of vertebrate tight junctions. ZO-1 is a peripheral (non-transmembrane) membrane protein found on the cytoplasmic leaflet of tight junctions. ZO-1 has a MW of 225 kDa and is found in two isoforms that differ by the presence or absence of an 80 amino acid region known as 'motif-a'⁽³⁾ and constitutes a basis for classifying tight junctions.⁽⁴⁾ ZO-1 is homologous to the dlg (discs-large) protein of *Drosophila* and the *C. elegans* lin-2 gene product. Loss of dlg results in neoplastic overgrowth of imaginal discs and loss of epithelial apical/basal polarity. ZO-1 and the interacting protein ZO-2 are members of a family of putative signal transduction proteins (MAGUK) whose members contain an SH3 domain, a domain with homology to guanylate kinases and a PDZ domain (potential mediator of protein-protein interaction) found in many synapse-associated proteins.^(5,6)



Immunofluorescence: ZO-1, Mouse Monoclonal Antibody - Alexa Fluor 488: Catalog No. 339188

Human Caco-2 cells stained with ZO-1, Mouse Monoclonal Antibody - Alexa Fluor 488 (Cat.No. 339188). DNA is counter stained with blue Hoechst 33258 (Cat. No H3569). For high resolution colored figure, please visit the product page online.

References

1. Penes, M., *Eur J Neurosci* 22:404-418 (2005).
2. Gumbiner, B.M., *Cell* 84:345-357 (1996).
3. Willott, E. et al., *Am J Physiol.* 262(5 Pt 1):C1119-24 (1992).
4. Balda, M.S. and Anderson, J.M., *Am J Physiol.* 264(4 Pt 1):C918-24 (1993).
5. Willott, E. et al., *PNAS, USA* 90:7834-7838 (1993).
6. Nagano, T., *J. Biochem (Tokyo)*, 124:869-875 (1998).

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