
anti-ZO-1

Cat #: HM1400
Goat polyclonal IgG
0.2 µg/µl, store at 4 °C

For research use only

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.

APPLICATION

This antibody specifically reacts with ZO-1 of human, mouse and rat origin.

The antibody can be used in Western blotting, immunoprecipitation and immunohistochemistry.

IMMUNOGEN

A synthetic peptide derived from N-terminus of human ZO-1 protein.

STORAGE

This antibody is stable for 12 months when stored at 2-8°C.

REFERENCES

1. Itoh, M., Furuse, M., Morita, K., Kubota, K., Saitou, M., and Tsukita, S. 1999. Direct binding of three tight junction-associated MAGUKs, ZO-1, ZO-2, and ZO-3, with the COOH termini of claudins. *J. Cell Biol.* 147: 1351-1363.
2. Itoh, M., Morita, K., and Tsukita, S. 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.
3. Anderson, J.M. 1996. Cell signalling: MAGUK magic. *Curr.Biol.* 6: 382-384.
4. Haskins, J., Gu, L., Wittchen, E.S., Hibbard, J., and Stevenson, B.R. 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.
5. Wittchen, E.S., Haskins, J., and Stevenson, B.R. 1999. Protein interactions at the tight junction. Actin has multiple binding partners, and ZO-1 forms independent complexes with ZO-2 and ZO-3. *J. Biol. Chem.* 274: 35179-35185.

6. Furuse, M., Itoh, M., Hirase, T., Nagafuchi, A., Yonemura, S., Tsukita, S., and Tsukita, S. 1994. Direct association of occluding with ZO-1 and its possible involvement in the localization of occludin at tight junctions. *J. Cell Biol.* 127: 1617-1626.
7. Furuse, M., Sasaki, H., and Tsukita, S. 1999. Manner of interaction of heterogeneous claudin species within and between tight junction strands. *J. Cell Biol.* 147: 891-903.
8. Hoover, K.B., Liao, S.Y., and Bryant, P.J. 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.
9. Giepmans, B.N., Verlaan, I. and Moolenaar, W.H. (2001) Connexin-43 interactions with ZO-1 and alpha- and beta-tubulin. *Cell Commun Adhes* 8, 219-223.

PRODUCT FROM HYPROMATRIX, INC.**A. AntibodyArray™s:**

1. Signal Transduction AntibodyArray™
Catalog Number HM3000
2. Apoptosis AntibodyArray™
Catalog Number HM4000
3. Cell Cycle AntibodyArray™
Catalog Number HM5000

B. Staining AntibodyArray™s

1. Staining AntibodyArray™ I
Catalog Number HM8100
2. AntibodyArray Staining Apparatus
Catalog Number HM8000

C. Antibodies**1. HRP-conjugated antibodies**

- anti-phosphotyrosine
Catalog Number HM2040
- anti-phosphoserine
Catalog Number HM2070
- anti-phosphothreonine
Catalog Number HM2090

and more...

2. Primary antibodies

Hypromatrix offers a variety of high quality antibodies. For a complete list of antibodies and their specificities, please visit our web site at www.hypromatrix.com.

CONTACT

Hypromatrix, Inc.
100 Barber Avenue
Worcester, MA 01606
USA

Tel: 508-856-7900
Fax: 508-302-0748
Email: contact@hypromatrix.com
Web: www.hypromatrix.com