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Anti-ZO-1 Antibody, clone 5G6.1 clone 5G6.1, from mouse

Art. ID	SAF-MABT339
Unit	EA

Description

Tight junction protein ZO-1 (UniProt Q07157, also known as Tight junction protein 1, Zona occludens protein 1, Zonula occludens protein 1) is encoded by the TJP1 gene (also known as ZO1) (Gene ID 7082) in human. The tight junction (TJ) constitutes the barrier between the apical and the basolateral domains of the plasma membrane. The assembly and permeability of this barrier are dependent on the zonula occludens (ZO) membrane-associated guanylate kinase (MAGUK) proteins ZO-1, ZO-2, and ZO-3. ZO-1, a 210-225 kDa protein, is found at the submembranous domain of TJs in epithelia and endothelia. ZO-1 contains three PDZ domains (PDZ1/aa23-109, PDZ2/aa181-261, PDZ3/aa422-502) at its N-treminal end, followed by an SH3 domain (aa519-580), a GUK/GK homology domain (aa632-782), an acidic domain (aa817-894), an alpha spliced domain (aa921-1000), and a C-terminal proline-rich/PR domain. ZO-1 is a phosphoprotein and a known substrate of serine/threonine kinases ZAK and of PKC. MAPK signaling pathway regulates tyrosine phosphorylation of ZO-1, and MEK1 inhibition in Ras transformed epithelial cells is reported to result in tyrosine phosphorylation of ZO-1 and occludin. ZO-1 interacts with claudins, JAM, ZO-2, and ZO-3 through its PDZ domains, while its GK module mediates interaction with occludin. ZO-1 also binds actin cytoskeleton and actin-binding protein 4.1 through its carboxyl terminal end. In addition, ZO-1 associates with AF-6 and cingulin at the TJ, as well as with the adherens junction protein alpha-catenin and with the gap junction proteins connexins 43 and 45.