#8683 Store at -20°C

Tight Junction Antibody Sampler Kit

1 Kit (6 x 20 microliters)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
CD2AP Antibody	2135	20 µl	80 kDa	Rabbit
Claudin-1 (D5H1D) XP® Rabbit mAb	13255	20 µl	20 kDa	Rabbit IgG
ZO-1 (D7D12) Rabbit mAb	8193	20 µl	220 kDa	Rabbit IgG
ZO-2 Antibody	2847	20 µl	150 kDa	Rabbit
ZO-3 (D57G7) XP® Rabbit mAb	3704	20 µl	140 kDa	Rabbit IgG
Afadin (D1Y3Z) Rabbit mAb	13531	20 µl	205 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The Tight Junction Antibody Sampler Kit provides an economical means to evaluate the presence of a number of proteins involved in tight junctions. The kit contains enough primary antibodies to perform two western blot experiments per primary antibody.

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

Background

Tight junctions, or zona occludens, form a continuous barrier to fluids across the epithelium and endothelium. They function in regulation of paracellular permeability and in the maintenance of cell polarity, blocking the movement of transmembrane proteins between the apical and basolateral cell surfaces (reviewed in 1). Tight junctions are composed of claudin and occludin transmembrane proteins, which join the junctions to the cytoskeleton (1,2). The claudin family is composed of 23 integral membrane proteins, and their expression, which varies among tissue types, may determine both the strength and properties of the epithelial barrier (2,3). Zona occludens proteins ZO-1, -2, and -3 (also known as TJP1, 2, and 3) are peripheral membrane adaptor proteins that link junctional transmembrane proteins such as occludin and claudin to the actin cytoskeleton (reviewed in 4). ZO-1 and ZO-2 are required for tight junction formation and function (5,6). In subconfluent proliferating cells, ZO-1 and ZO-2 have been shown to colocalize to the nucleus and play a role in transcriptional regulation (7-9). Exogenous expression of the amino terminal portion of ZO-3 exerts a dominant negative effect that interferes with assembly of tight junctions and adherens junctions (10). ZO-1 has been shown to interact with afadin prior to the formation of tight junctions (11). Recent work has also shown that afadin is involved in controlling the directionality of cell movement when it is localized at the leading edge of moving cells (12,13). CD2AP is a scaffolding protein that is thought to link membrane proteins to the cytoskeleton (14-16). It plays a role in the formation of tight junctions in specialized cell types such as the slit diaphragm of the kidney glomerulus (17). CD2AP is also involved in the immunological synapse between CD2-expressing T cells and antigen presenting cells (18). Research studies have shown that interaction between CD2AP and other cytoskeletal proteins may regulate the endocytosis of EGFR (16).

Background References

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