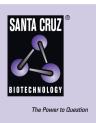
SANTA CRUZ BIOTECHNOLOGY, INC.

ZO-1 siRNA (m): sc-29832



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, Z0-1, Z0-2 and Z0-3. 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. Z0-1 forms complexes with either Z0-2 or Z0-3. 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. Z0-1 expression is significantly reduced in many breast cancer lines. Z0-2 and Z0-3 are ubiquitously expressed within epithelial tight junctions. Unlike Z0-1, which is also expressed at cell junctions of cardiac myocytes, Z0-2 is not expressed in nonepithelial tissue.

REFERENCES

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- Hoover, K.B., et al. 1998. Loss of the tight junction MAGUK Z0-1 in breast cancer: relationship to glandular differentiation and loss of heterozygosity. Am. J. Pathol. 153: 1767-1773.
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- Itoh, M., et al. 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.
- Itoh, M., et al. 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 a catenin. J. Biol. Chem. 274: 5981-5986.

CHROMOSOMAL LOCATION

Genetic locus: Tjp1 (mouse) mapping to 7 C.

PRODUCT

ZO-1 siRNA (m) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ZO-1 shRNA Plasmid (m): sc-29832-SH and ZO-1 shRNA (m) Lentiviral Particles: sc-29832-V as alternate gene silencing products.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNAse-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Z0-1 siRNA (m) is recommended for the inhibition of Z0-1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Z0-1 (R40.76): sc-33725 is recommended as a control antibody for monitoring of Z0-1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ZO-1 gene expression knockdown using RT-PCR Primer: ZO-1 (m)-PR: sc-29832-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

 Wang, H., et al. 2008. Zonula occludens-1 (Z0-1) is involved in morula to blastocyst transformation in the mouse. Dev. Biol. 318: 112-125.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.