SANTA CRUZ BIOTECHNOLOGY, INC.

Dist1 siRNA (m): sc-143049

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The rhomboid family of genes encode a group of proteins with six- or seven-transmembrane domains found in a wide range of organisms. Dist1, also known as RHBDF1 (rhomboid family member 1), rhomboid 5 homolog 1, p100^{hRho} or C16orf8, is an 855 amino acid multi-pass membrane protein localized to the endoplasmic reticulum and Golgi apparatus. Belonging to the peptidase S54 family, Dist1 interacts with TGFα and HB-EGF and is not expected to have protease activity. Dist1 gene function is essential to epithelial cancer cell growth because it sustains growth signals. Existing as a homodimer or homooligomer, Dist1 is highly expressed in heart, skeletal muscle, placenta and pancreatic islet, with lower levels in colon, kidney, small intestine and lung. The gene encoding Dist1 maps to human chromosome 16p13.3 and mouse chromosome 11 A4.

REFERENCES

1. Koonin, E.V., et al. 2003. The rhomboids: a nearly ubiquitous family of intramembrane serine proteases that probably evolved by multiple ancient horizontal gene transfers. Genome Biol. 4: R19.
2. Nakagawa, T., et al. 2005. Characterization of a human rhomboid homolog, p100^{hRho}/RHBDF1, which interacts with TGF-α family ligands. Dev. Dyn. 233: 1315-1331.
3. Lemberg, M.K. and Freeman, M. 2007. Cutting proteins within lipid bilayers: rhomboid structure and mechanism. Mol. Cell 28: 930-940.
4. Wang, Y., et al. 2008. A novel member of the Rhomboid family, RHBDD1, regulates BIK-mediated apoptosis. Cell. Mol. Life Sci. 65: 3822-3829.
5. Yan, Z., et al. 2008. Human rhomboid family-1 gene silencing causes apoptosis or autophagy to epithelial cancer cells and inhibits xenograft tumor growth. Mol. Cancer Ther. 7: 1355-1364.
6. Zou, H., et al. 2009. Human rhomboid family-1 gene RHBDF1 participates in GPCR-mediated transactivation of EGFR growth signals in head and neck squamous cancer cells. FASEB J. 23: 425-432.
7. Freeman, M. 2009. Rhomboids: 7 years of a new protease family. Semin. Cell Dev. Biol. 20: 231-239.

CHROMOSOMAL LOCATION

Genetic locus: Rhbdf1 (mouse) mapping to 11 A4.

PRODUCT

Dist1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Dist1 shRNA Plasmid (m): sc-143049-SH and Dist1 shRNA (m) Lentiviral Particles: sc-143049-V as alternate gene silencing products.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Dist1 siRNA (m) is recommended for the inhibition of Dist1 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 µM in 66 µl. 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Dist1 gene expression knockdown using RT-PCR Primer: Dist1 (m)-PR: sc-143049-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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