SANTA CRUZ BIOTECHNOLOGY, INC.

DUSP23 siRNA (h): sc-77202

BACKGROUND

Dual specificity phosphatases (DSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DSP gene expression is induced by a host of growth factors and/or cellular stresses, thereby negatively regulating MAP kinase superfamily members including MAPK/ERK, SAPK/JNK and p38. The members of the dual-specificity phosphatase protein family include MKP-1/CL100 (3CH134), MKP-2, MKP-3, MKP-4, MKP-5, MKP-6, MKP-7, MKP-X, VHR, VHY, PAC1, hVH-3 (B23), hVH-5, PYST2, DUSP1, DUSP5, DUSP8, DUSP23, PIR1 and SKRP1. DUSP23, also known as LDP3 (low molecular mass dual specificity phosphatase 3) or VHZ (VH1-like phosphatase Z), is a 150 amino acid member of the non-receptor class dual specificity protein subfamily. Localized to cytoplasm and the nucleus, DUSP23 contains one tyrosine-protein phosphatase domain. Widely expressed, DUSP23 is found at highest levels in prostate, thyroid, mammary gland, colon, adrenal gland, spleen and trachea.

REFERENCES

1. Takagaki, K., et al. 2004. Characterization of a novel low-molecular-mass dual-specificity phosphatase-3 (LDP-3) that enhances activation of JNK and p38. Biochem. J. 383: 447-455.
2. Wu, Q., et al. 2004. Molecular cloning and characterization of a novel dual-specificity phosphatase 23 gene from human fetal brain. Int. J. Biochem. Cell Biol. 36: 1542-1553.
3. Alonso, A., et al. 2004. The minimal essential core of a cysteine-based protein-tyrosine phosphatase revealed by a novel 16-kDa VH1-like phosphatase, VHZ. J. Biol. Chem. 279: 35768-35774.
4. Liu, C.Y., et al. 2010. A Large-scale genetic association study of esophageal adenocarcinoma risk. Carcinogenesis 31: 1259-1263.
5. Bailey, S.D., et al. 2010. Variation at the NFATC2 locus increases the risk of thiazolidinedione-induced edema in the Diabetes REduction Assessment with ramipril and rosiglitazone Medication (DREAM) study. Diabetes Care 33: 2250-2253.
6. Tang, J.P., et al. 2010. VHZ is a novel centrosomal phosphatase associated with cell growth and human primary cancers. Mol. Cancer 9: 128.

CHROMOSOMAL LOCATION

Genetic locus: DUSP23 (human) mapping to 1q23.2.

PRODUCT

DUSP23 siRNA (h) is a pool of 2 target-specific 19-25 nt siRNAs 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 DUSP23 shRNA Plasmid (h): sc-77202-SH and DUSP23 shRNA (h) Lentiviral Particles: sc-77202-V as alternate gene silencing products.

For independent verification of DUSP23 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-77202A and sc-77202B.

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

DUSP23 siRNA (h) is recommended for the inhibition of DUSP23 expression in human 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 DUSP23 gene expression knockdown using RT-PCR Primer: DUSP23 (h)-PR: sc-77202-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.

PROTOCOLS

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