SANTA CRUZ BIOTECHNOLOGY, INC.

DUSP24 siRNA (h): sc-89370

BACKGROUND

Mitogen-activated protein (MAP) kinases are a large class of proteins involved in signal transduction pathways, which are activated by a range of stimuli and mediate a number of physiological and pathological changes in the cell. Dual specificity phosphatases (DUSPs) are a subclass of the protein tyrosine phosphatase (PTP) gene superfamily, which are selective for dephosphorylating critical phosphothreonine and phosphotyrosine residues within MAP kinases. DUSP 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. DUSP24, also designated MK-STYX, is likely a psuedophosphatase that is catalytically inactive. However, DUSP24 is consistently expressed in Ewing's sarcoma family tumors (ESFT) and may be a potential therapeutic target in that disease.

REFERENCES

1. Keyse, S.M. 1995. An emerging family of dual specificity MAP kinase phosphatases. Biochim. Biophys. Acta 1265: 152-160.
2. Martell, K.J., Seasholtz, A.F., Kwak, S.P., Clemens, K.K. and Dixon, J.E. 1995. hVH-5: a protein tyrosine phosphatase abundant in brain that inactivates mitogen-activated protein kinase. J. Neurochem. 65: 1823-1833.
3. Sun, H. 1998. Functional studies of dual-specificity phosphatases. Methods Mol. Biol. 84: 307-318.
4. Camps, M., Nichols, A. and Arkinstall, S. 2000. Dual specificity phosphatases: a gene family for control of MAP kinase function. FASEB J. 14: 6-16.
5. Siligan, C., Ban, J., Bachmaier, R., Spahn, L., Kreppel, M., Schaefer, K.L., Poremba, C., Aryee, D.N. and Kovar, H. 2005. EWS-FLI1 target genes recovered from Ewing's sarcoma chromatin. Oncogene 24: 2512-2524.
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CHROMOSOMAL LOCATION

Genetic locus: STYXL1 (human) mapping to 7q11.23.

PRODUCT

DUSP24 siRNA (h) is a pool of 3 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 DUSP24 shRNA Plasmid (h): sc-89370-SH and DUSP24 shRNA (h) Lentiviral Particles: sc-89370-V as alternate gene silencing products.

For independent verification of DUSP24 (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-89370A, sc-89370B and sc-89370C.

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

DUSP24 siRNA (h) is recommended for the inhibition of DUSP24 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 DUSP24 gene expression knockdown using RT-PCR Primer: DUSP24 (h)-PR: sc-89370-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.