SANTA CRUZ BIOTECHNOLOGY, INC.

# Inactive DUSP27 siRNA (h): sc-106835

## 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. Inactive DUSP27 (inactive dual specificity phosphatase 27) is a 1,158 amino acid protein belonging to the protein-tyrosine phosphatase family and the non-receptor class dual specificity subfamily. Inactive DUSP27 contains one tyrosine-protein phosphatase domain and, in contrast to other members of the family, it lacks the conserved active cysteine in position 225 which is replaced by a serine residue, suggesting that it is inactive.

## REFERENCES


1. Ishibashi, T., et al. 1994. A novel dual specificity phosphatase induced by serum stimulation and heat shock. J. Biol. Chem. 269: 29897-29902.
2. Kwak, S.P. and Dixon, J.E. 1995. Multiple dual specificity protein tyrosine phosphatases are expressed and regulated differentially in liver cell lines. J. Biol. Chem. 270: 1156-1160.
3. Aoki, N., et al. 2001. A growing family of dual specificity phosphatases with low molecular masses. J. Biochem. 130: 133-140.
4. Friedberg, I., et al. 2007. Identification and characterization of DUSP27, a novel dual-specific protein phosphatase. FEBS Lett. 581: 2527-2533.
5. Teng, C.H., et al. 2007. Several dual specificity phosphatases coordinate to control the magnitude and duration of JNK activation in signaling response to oxidative stress. J. Biol. Chem. 282: 28395-28407.
6. Salojin, K. and Oravecz, T. 2007. Regulation of innate immunity by MAPK dual-specificity phosphatases: knockout models reveal new tricks of old genes. J. Leukoc. Biol. 81: 860-869.
7. Jeffrey, K.L., et al. 2007. Targeting dual-specificity phosphatases: manipulating MAP kinase signalling and immune responses. Nat. Rev. Drug Discov. 6: 391-403.


## CHROMOSOMAL LOCATION

Genetic locus: DUSP27 (human) mapping to 1q24.1.

## PRODUCT

Inactive DUSP27 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 Inactive DUSP27 shRNA Plasmid (h): sc-106835-SH and Inactive DUSP27 shRNA (h) Lentiviral Particles: sc-106835-V as alternate gene silencing products.

For independent verification of Inactive DUSP27 (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-106835A, sc-106835B and sc-106835C.

## 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

Inactive DUSP27 siRNA (h) is recommended for the inhibition of Inactive DUSP27 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 Inactive DUSP27 gene expression knockdown using RT-PCR Primer: Inactive DUSP27 (h)-PR: sc-106835-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.