

PADI3 siRNA (m): sc-62748

BACKGROUND

The protein arginine deiminase (PAD) family of proteins, often referred to as peptidylarginine deiminases, catalyze the deimination of arginine residues of proteins. The PAD proteins, designated PADI1-4, are cytoplasmic proteins primarily detected in eosinophils and neutrophils. In the presence of calcium, PAD proteins act as catalysts for the post-translational modification reaction that converts methylarginine to citrulline. PADI3 (peptidyl arginine deiminase, type III), also called PAD3 or PDI3, is a cytoplasmic protein that modulates Filaggrin and Trichohyalin (proteins involved in hair structure) during formation of the hair follicle. Expressed in hair and at very low levels in the epidermis, PADI3 is thought to interact with PADI1 and participate in terminal differentiation of the epidermis.

REFERENCES

1. Iida, A., et al. 2004. Identification of 45 novel SNPs in the 83-kb region containing peptidylarginine deiminase types 1 and 3 loci on chromosomal band 1p36.13. *J. Hum. Genet.* 49: 387-390.
2. Nachat, R., et al. 2005. Peptidylarginine deiminase isoforms 1-3 are expressed in the epidermis and involved in the deimination of K1 and filaggrin. *J. Invest. Dermatol.* 124: 384-393.
3. Mechin, M.C., et al. 2005. The peptidylarginine deiminases expressed in human epidermis differ in their substrate specificities and subcellular locations. *Cell. Mol. Life Sci.* 62: 1984-1995.
4. Balandraud, N., et al. 2005. A rigorous method for multigenic families' functional annotation: the peptidyl arginine deiminase (PADs) proteins family example. *BMC Genomics* 6: 153-153.
5. Dong, S., et al. 2006. NF-Y and Sp1/Sp3 are involved in the transcriptional regulation of the peptidylarginine deiminase type III gene (PADI3) in human keratinocytes. *Biochem. J.* 397: 449-459.
6. Foulquier, C., et al. 2007. Peptidyl arginine deiminase type 2 (PAD-2) and PAD-4 but not PAD-1, PAD-3, and PAD-6 are expressed in rheumatoid arthritis synovium in close association with tissue inflammation. *Arthritis Rheum.* 56: 3541-3553.

CHROMOSOMAL LOCATION

Genetic locus: Padi3 (mouse) mapping to 4 D3.

PRODUCT

PADI3 siRNA (m) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PADI3 shRNA Plasmid (m): sc-62748-SH and PADI3 shRNA (m) Lentiviral Particles: sc-62748-V as alternate gene silencing products.

For independent verification of PADI3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62748A, sc-62748B and sc-62748C.

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

PADI3 siRNA (m) is recommended for the inhibition of PADI3 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

PADI3 (F-6): sc-393622 is recommended as a control antibody for monitoring of PADI3 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PADI3 gene expression knockdown using RT-PCR Primer: PADI3 (m)-PR: sc-62748-PR (20 μ l). 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.