

PADI2 siRNA (m): sc-61282

BACKGROUND

The protein arginine deiminase (PAD) family of proteins, often referred to as peptidylarginine deiminases, catalyze the deimination of arginine residues of proteins. In the presence of calcium, the proteins in the PAD family act as catalysts for the posttranslational modification reaction that converts methyl-arginine to citrulline. The PAD proteins are cytoplasmic proteins primarily detected in eosinophils and neutrophils. The only tissue that contains all four forms of PAD (PADI1-4) is epidermis. PADI2 may play a crucial role during terminal differentiation of epidermal keratinocytes.

REFERENCES

1. Ishigami, A., et al. 2002. Human peptidylarginine deiminase type II: molecular cloning, gene organization, and expression in human skin. *Arch. Biochem. Biophys.* 407: 25-31.
2. Chavanas, S., et al. 2004. Comparative analysis of the mouse and human peptidylarginine deiminase gene clusters reveals highly conserved non-coding segments and a new human gene, PADI6. *Gene* 330: 19-27.
3. Dong, S., et al. 2005. Regulation of the expression of peptidylarginine deiminase type II gene (PADI2) in human keratinocytes involves Sp1 and Sp3 transcription factors. *J. Invest. Dermatol.* 124: 1026-1033.
4. Nakayama-Hamada, M., et al. 2005. Comparison of enzymatic properties between hPADI2 and hPADI4. *Biochem. Biophys. Res. Commun.* 327: 192-200.
5. Bhattacharya, S.K., et al. 2006. Proteomics implicates peptidyl arginine deiminase 2 and optic nerve citrullination in glaucoma pathogenesis. *Invest. Ophthalmol. Vis. Sci.* 47: 2508-2514.
6. Roth, E.B., et al. 2006. Antibodies against transglutaminases, peptidylarginine deiminase and citrulline in rheumatoid arthritis—new pathways to epitope spreading. *Clin. Exp. Rheumatol.* 24: 12-18.

CHROMOSOMAL LOCATION

Genetic locus: Padi2 (mouse) mapping to 4 D3.

PRODUCT

PADI2 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 PADI2 shRNA Plasmid (m): sc-61282-SH and PADI2 shRNA (m) Lentiviral Particles: sc-61282-V as alternate gene silencing products.

For independent verification of PADI2 (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-61282A, sc-61282B and sc-61282C.

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 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

PADI2 siRNA (m) is recommended for the inhibition of PADI2 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

PADI2 (4D4): sc-293271 is recommended as a control antibody for monitoring of PADI2 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 PADI2 gene expression knockdown using RT-PCR Primer: PADI2 (m)-PR: sc-61282-PR (20 μ l, 548 bp). 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.