

PADI1 siRNA (h): sc-106349

BACKGROUND

The protein arginine deiminase (PAD) family of proteins are also often referred to as peptidylarginine deiminases. They catalyze the deimination of arginine residues of proteins. In the presence of calcium, the proteins in the PAD family act as catalysts for the post-translational modification reaction that converts methylarginine 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. In addition to epidermis, PADI4 is primarily expressed in prostate, testis, spleen, placenta and thymus.

REFERENCES

- Guerrin, M., Ishigami, A., Méchin, M.C., Nachat, R., Valmary, S., Sebbag, M., Simon, M., Senshu, T. and Serre, G. 2003. cDNA cloning, gene organization and expression analysis of human peptidylarginine deiminase type I. *Biochem. J.* 370: 167-174.
- Chavanas, S., Méchin, M.C., Takahara, H., Kawada, A., Nachat, R., Serre, G. and Simon, M. 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.
- Iida, A. and Nakamura, Y. 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.
- Roth, E.B., Stenberg, P., Book, C. and Sjöberg, K. 2006. Antibodies against in rheumatoid arthritis—new pathways to epitope spreading. *Clin. Exp. Rheumatol.* 24: 12-18.
- Liu, G.Y., Liao, Y.F., Chang, W.H., Liu, C.C., Hsieh, M.C., Hsu, P.C., Tsay, G.J. and Hung, H.C. 2006. Overexpression of peptidylarginine deiminase IV features in apop cells. *Apoptosis* 11: 183-196.

CHROMOSOMAL LOCATION

Genetic locus: PADI1 (human) mapping to 1p36.13.

PRODUCT

PADI1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PADI1 shRNA Plasmid (h): sc-106349-SH and PADI1 shRNA (h) Lentiviral Particles: sc-106349-V as alternate gene silencing products.

For independent verification of PADI1 (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-106349A, sc-106349B and sc-106349C.

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.

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

PADI1 siRNA (h) is recommended for the inhibition of PADI1 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PADI1 gene expression knockdown using RT-PCR Primer: PADI1 (h)-PR: sc-106349-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.