

# PM20D1 siRNA (h): sc-78888

## BACKGROUND

PM20D1 (peptidase M20 domain containing 1), also known as probable carboxypeptidase PM20D1 or Cps1, is a 502 amino acid protein that belongs to the peptidase M20A family. Existing as two alternatively spliced isoforms, PM20D1 participates in calcium ion binding and metal ion binding, whereby binding two zinc ions per subunit. PM20D1 is also involved in hydrolase and metallopeptidase activities. Conserved in chimpanzee, canine, bovine, mouse, rat, chicken, zebrafish, *S. pombe*, *S. cerevisiae*, *K. lactis*, *E. gossypii* and *M. grisea*, PM20D1 is encoded by a gene that maps to human chromosome 1q32.1. As the largest human chromosome, chromosome 1 spans 260 million base pairs that encode 3,000 genes and makes up 8% of the human genome. A breakpoint in 1q is linked to schizophrenia, and aberrations in chromosome 1 exist in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

## REFERENCES

- Blackwood, D.H., Fordyce, A., Walker, M.T., St Clair, D.M., Porteous, D.J. and Muir, W.J. 2001. Schizophrenia and affective disorders— cosegregation with a translocation at chromosome 1q42 that directly disrupts brain-expressed genes: clinical and P300 findings in a family. *Am. J. Hum. Genet.* 69: 428-433.
- Marzin, Y., Jamet, D., Douet-Guilbert, N., Morel, F., Le Bris, M.J., Morice, P., Abgrall, J.F., Berthou, C. and De Braekeleer, M. 2006. Chromosome 1 abnormalities in multiple myeloma. *Anticancer Res.* 26: 953-959.
- Gudjonsson, J.E., Ding, J., Li, X., Nair, R.P., Tejasvi, T., Qin, Z.S., Ghosh, D., Aphale, A., Gumucio, D.L., Voorhees, J.J., Abecasis, G.R. and Elder, J.T. 2009. Global gene expression analysis reveals evidence for decreased lipid biosynthesis and increased innate immunity in uninvolved psoriatic skin. *J. Invest. Dermatol.* 129: 2795-2804.
- Satake, W., Nakabayashi, Y., Mizuta, I., Hirota, Y., Ito, C., Kubo, M., Kawaguchi, T., Tsunoda, T., Watanabe, M., Takeda, A., Tomiyama, H., Nakashima, K., Hasegawa, K., Obata, F., Yoshikawa, T., Kawakami, H., et al. 2009. Genome-wide association study identifies common variants at four loci as genetic risk factors for Parkinson's disease. *Nat. Genet.* 41: 1303-1307.
- Simón-Sánchez, J., Schulte, C., Bras, J.M., Sharma, M., Gibbs, J.R., Berg, D., Paisán-Ruiz, C., Lichtner, P., Scholz, S.W., Hernandez, D.G., Krüger, R., Federoff, M., Klein, C., Goate, A., Perlmutter, J., Bonin, M., et al. 2009. Genome-wide association study reveals genetic risk underlying Parkinson's disease. *Nat. Genet.* 41: 1308-1312.
- Tucci, A., Nalls, M.A., Houlden, H., Revesz, T., Singleton, A.B., Wood, N.W., Hardy, J. and Paisán-Ruiz, C. 2010. Genetic variability at the PARK16 locus. *Eur. J. Hum. Genet.* 18: 1356-1359.
- Mathias, R.A., Chen, Y.S., Wang, B., Ji, H., Kapp, E.A., Moritz, R.L., Zhu, H.J. and Simpson, R.J. 2010. Extracellular remodelling during oncogenic Ras-induced epithelial-mesenchymal transition facilitates MDCK cell migration. *J. Proteome Res.* 9: 1007-1019.
- Liu, J., Hutchison, K., Perrone-Bizzozero, N., Morgan, M., Sui, J. and Calhoun, V. 2010. Identification of genetic and epigenetic marks involved in population structure. *PLoS ONE* 5: e13209.

## CHROMOSOMAL LOCATION

Genetic locus: PM20D1 (human) mapping to 1q32.1.

## PRODUCT

PM20D1 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PM20D1 shRNA Plasmid (h): sc-78888-SH and PM20D1 shRNA (h) Lentiviral Particles: sc-78888-V as alternate gene silencing products.

For independent verification of PM20D1 (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-78888A, sc-78888B and sc-78888C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

PM20D1 siRNA (h) is recommended for the inhibition of PM20D1 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  $\mu$ M in 66  $\mu$ 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 PM20D1 gene expression knockdown using RT-PCR Primer: PM20D1 (h)-PR: sc-78888-PR (20  $\mu$ 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.