



PGBD5 siRNA (m): sc-152186

BACKGROUND

Initially characterized in the cabbage looper moth, *Trichoplusia ni*, the PGBD (piggyBac transposable element-derived) family is comprised of a group of transposases that are conserved in a wide variety of species, including protozoa and primates. More specifically, while PGBD3 and PGBD4 are primate-specific genes, the other three members of the PGBD family (namely PGBD1, PGBD2 and PGBD5) are conserved among a variety of vertebrates. PGBD5 (piggyBac transposable element derived 5) is a 455 amino acid single-pass membrane protein that is the most highly divergent of the human piggyBac-derived genes. PGBD5 possesses eight introns that are nearly evenly spaced along the length of the gene, most of which are shared with both mouse and pufferfish orthologs. The existence of a pufferfish ortholog for PGBD5, but not for PGBD1-4, denotes its antiquity and indicates that PGBD5 gained its introns before the teleost/tetrapod split.

REFERENCES

1. Sarkar, A., Sim, C., Hong, Y.S., Hogan, J.R., Fraser, M.J., Robertson, H.M. and Collins, F.H. 2003. Molecular evolutionary analysis of the widespread piggyBac transposon family and related "domesticated" sequences. *Mol. Genet. Genomics* 270: 173-180.
2. Kaneda, R., Toyota, M., Yamashita, Y., Koinuma, K., Choi, Y.L., Ota, J., Kisanuki, H., Ishikawa, M., Takada, S., Shimada, K. and Mano, H. 2004. High-throughput screening of genome fragments bound to differentially acetylated histones. *Genes Cells* 9: 1167-1174.
3. Volff, J.N. 2006. Turning junk into gold: domestication of transposable elements and the creation of new genes in eukaryotes. *Bioessays* 28: 913-922.
4. Gregory, S.G., Barlow, K.F., McLay, K.E., Kaul, R., Swarbreck, D., Dunham, A., Scott, C.E., Howe, K.L., Woodfine, K., Spencer, C.C., Jones, M.C., Gillson, C., Searle, S., Zhou, Y., Kokocinski, F., McDonald, L., et al. 2006. The DNA sequence and biological annotation of human chromosome 1. *Nature* 441: 315-321.
5. Lae, M., Ahn, E.H., Mercado, G.E., Chuai, S., Edgar, M., Pawel, B.R., Olshen, A., Barr, F.G. and Ladanyi, M. 2007. Global gene expression profiling of PAX-FKHR fusion-positive alveolar and PAX-FKHR fusion-negative embryonal rhabdomyosarcomas. *J. Pathol.* 212: 143-151.
6. Newman, J.C., Bailey, A.D., Fan, H.Y., Pavelitz, T. and Weiner, A.M. 2008. An abundant evolutionarily conserved CSB-piggyBac fusion protein expressed in Cockayne syndrome. *PLoS Genet.* 4: e1000031.

CHROMOSOMAL LOCATION

Genetic locus: Pgbd5 (mouse) mapping to 8 E2.

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.

PRODUCT

PGBD5 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 PGBD5 shRNA Plasmid (m): sc-152186-SH and PGBD5 shRNA (m) Lentiviral Particles: sc-152186-V as alternate gene silencing products.

For independent verification of PGBD5 (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-152186A, sc-152186B and sc-152186C.

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

PGBD5 siRNA (m) is recommended for the inhibition of PGBD5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PGBD5 gene expression knockdown using RT-PCR Primer: PGBD5 (m)-PR: sc-152186-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.