SANTA CRUZ BIOTECHNOLOGY, INC.

Pael-R siRNA (m): sc-77374

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The Power to Question

BACKGROUND

Pael-R (Parkin-associated endothelin receptor-like receptor), also known as GPR37 (G protein-coupled receptor 37), EDNRBL or ETBR-LP-1 (endothelin B receptor-like protein 1), is a 613 amino acid multi-pass membrane protein that belongs to the G protein-coupled receptor 1 family. Pael-R is expressed in spinal cord and brain, with lower levels found in liver, testis and placenta. When overexpressed, Pael-R causes cells to unfold and accumulate, eventually causing dopaminergic neuronal death in juvenile Parkinson disease (PDJ). Pael-R functions as an orphan receptor and also forms a complex with CHIP, HSP 70 and Parkin. The gene encoding Pael-R maps to human chromosome 7, which comprises nearly 5% of the human genome and has been linked to osteogenesis imperfecta, Pendred syndrome and Williams-Beuren syndrome.

REFERENCES

1. Tsipouras, P., et al. 1983. Restriction fragment length polymorphism associated with the pro α 2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. J. Clin. Invest. 72: 1262-1267.
2. Zeng, Z., et al. 1997. A novel endothelin receptor type-B-like gene enriched in the brain. Biochem. Biophys. Res. Commun. 233: 559-567.
3. Donohue, P.J., et al. 1998. A human gene encodes a putative G protein-coupled receptor highly expressed in the central nervous system. Brain Res. Mol. Brain Res. 54: 152-160.
4. Iwasaki, S., et al. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. Arch. Otolaryngol. Head Neck Surg. 127: 705-708.
5. Imai, Y., et al. 2001. An unfolded putative transmembrane polypeptide, which can lead to endoplasmic reticulum stress, is a substrate of Parkin. Cell 105: 891-902.
6. Imai, Y., et al. 2002. CHIP is associated with Parkin, a gene responsible for familial Parkinson's disease, and enhances its ubiquitin ligase activity. Mol. Cell 10: 55-67.
7. Imai, Y., et al. 2003. A product of the human gene adjacent to Parkin is a component of Lewy bodies and suppresses Pael receptor-induced cell death. J. Biol. Chem. 278: 51901-51910.

CHROMOSOMAL LOCATION

Genetic locus: Gpr37 (mouse) mapping to 6 A3.1.

PRODUCT

Pael-R 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Pael-R shRNA Plasmid (m): sc-77374-SH and Pael-R shRNA (m) Lentiviral Particles: sc-77374-V as alternate gene silencing products.

For independent verification of Pael-R (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-77374A, sc-77374B and sc-77374C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Pael-R siRNA (m) is recommended for the inhibition of Pael-R 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 µM in 66 µl. 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

Pael-R (G-6): sc-390110 is recommended as a control antibody for monitoring of Pael-R 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 Pael-R gene expression knockdown using RT-PCR Primer: Pael-R (m)-PR: sc-77374-PR (20 µl). 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.