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PLC-XD1 siRNA (m): sc-152299

BACKGROUND

PLC-XD1 (PI-PLC X domain-containing protein 1) is a 323 amino acid enzyme that contains a phosphatidylinositol-specific phospholipase C X domain, which seems to be responsible for its catalytic activity. The gene encoding PLC-XD1 is located in the pseudoautosomal region 1 (PAR1) of X and Y chromosomes, therefore it is most likely inherited as an autosomal gene rather than in a sex-linked fashion. Recombination between pseudoautosomal regions is necessary for the progression of normal spermatogenesis, therefore disruptions of this process may lead to disorders such as male infertility or certain aneuploidy conditions. There are two human homologs of pseudoautosomal regions, PAR1 and PAR2. PAR1 is located at the tips of the short arms while PAR2 is located at the tips of the long arms. PAR1 has been shown to contain several active genes, all of which escape X inactivation. It is thought that these regions are remnants of rearrangement and degradation of the ancestral Y chromosome.

REFERENCES

- Graves, J.A., et al. 1998. The origin and evolution of the pseudoautosomal regions of human sex chromosomes. *Hum. Mol. Genet.* 7: 1991-1996.
- Charchar, F.J., et al. 2003. Complex events in the evolution of the human pseudoautosomal region 2 (PAR2). *Genome Res.* 13: 281-286.
- Skaletsky, H., et al. 2003. The male-specific region of the human Y chromosome is a mosaic of discrete sequence classes. *Nature* 423: 825-837.
- Helena Mangs, A. and Morris, B.J. 2007. The Human Pseudoautosomal Region (PAR): origin, function and future. *Curr. Genomics* 8: 129-136.
- Suh, P.G., et al. 2008. Multiple roles of phosphoinositide-specific phospholipase C isozymes. *BMB Rep.* 41: 415-434.
- Flaquer, A., et al. 2008. The human pseudoautosomal regions: a review for genetic epidemiologists. *Eur. J. Hum. Genet.* 16: 771-779.
- Nieländer, I., et al. 2008. Recurrent loss of the Y chromosome and homozygous deletions within the pseudoautosomal region 1: association with male predominance in mantle cell lymphoma. *Haematologica* 93: 949-950.

CHROMOSOMAL LOCATION

Genetic locus: *Plcx1* (mouse) mapping to 5 F.

PRODUCT

PLC-XD1 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 PLC-XD1 shRNA Plasmid (m): sc-152299-SH and PLC-XD1 shRNA (m) Lentiviral Particles: sc-152299-V as alternate gene silencing products.

For independent verification of PLC-XD1 (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-152299A, sc-152299B and sc-152299C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

PLC-XD1 siRNA (m) is recommended for the inhibition of PLC-XD1 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

PLC-XD1 (A-1): sc-393244 is recommended as a control antibody for monitoring of PLC-XD1 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 PLC-XD1 gene expression knockdown using RT-PCR Primer: PLC-XD1 (m)-PR: sc-152299-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.