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group IIC sPLA₂ siRNA (r): sc-270118

BACKGROUND

Phospholipase A₂s (PLA₂s) constitute a family of esterases that hydrolyze the sn-2-acyl ester bond in glycerophospholipid molecules. These enzymes are generally calcium-dependent and have been found both intra- and extracellularly. By hydrolyzing the sn-2 bond in glycerophospholipids, PLA₂s release fatty acids. One such fatty acid, arachidonic acid, generates substrates for the initiation of the arachidonic acid cascade that produces various eicosanoids, many of which are potent mediators of inflammation. As a member of the PLA₂ family, group IIC sPLA₂, also known as PLA₂G2C, is a 149 amino acid secreted protein that is suggested to be an inactive phospholipase. In mice, mutation of the group IIC sPLA₂ gene leads to an increase number of intestinal polyps in the multiple intestinal neoplasia (Min), which is the murine model for adenomatous polyposis coli in humans. However, group IIC sPLA₂ gene mutation is suggested not to play a role in the development of adenomatous polyps in humans.

REFERENCES

1. Seilhamer, J.J., et al. 1989. Novel gene exon homologous to pancreatic phospholipase A₂: sequence and chromosomal mapping of both human genes. *J. Cell. Biochem.* 39: 327-337.
2. Johnson, L.K., et al. 1990. Localization and evolution of two human phospholipase A₂ genes and two related genetic elements. *Adv. Exp. Med. Biol.* 275: 17-34.
3. Spirio, L.N., et al. 1996. Three secretory phospholipase A₂ genes that map to human chromosome 1P35-36 are not mutated in individuals with attenuated adenomatous polyposis coli. *Cancer Res.* 56: 955-958.
4. Tischfield, J.A., et al. 1996. Low-molecular-weight, calcium-dependent phospholipase A₂ genes are linked and map to homologous chromosome regions in mouse and human. *Genomics* 32: 328-333.
5. Chen, J., et al. 1997. Localization of group IIC low molecular weight phospholipase A₂ mRNA to meiotic cells in the mouse. *J. Cell. Biochem.* 64: 369-375.

CHROMOSOMAL LOCATION

Genetic locus: Pla2g2c (rat) mapping to 5q36.

PRODUCT

group IIC sPLA₂ siRNA (r) is a pool of 2 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 group IIC sPLA₂ shRNA Plasmid (r): sc-270118-SH and group IIC sPLA₂ shRNA (r) Lentiviral Particles: sc-270118-V as alternate gene silencing products.

For independent verification of group IIC sPLA₂ (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270118A and sc-270118B.

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 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

group IIC sPLA₂ siRNA (r) is recommended for the inhibition of group IIC sPLA₂ expression in rat 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor group IIC sPLA₂ gene expression knockdown using RT-PCR Primer: group IIC sPLA₂ (r)-PR: sc-270118-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.