SANTA CRUZ BIOTECHNOLOGY, INC.

group IVD $sPLA_2$ siRNA (m): sc-145776

BACKGROUND

Phospholipase A_2s (PLA_2s) 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, PLA_2s release fatty acids. One such fatty acid, arachidonic acid, generates the substrates for the initiation of the arachidonic acid cascade that produces various eicosanoids, many of which are potent mediators of inflammation. Group IVD $sPLA_2$, also known as PLA2G4D (phospholipase A_2 group IVD) or $cPLA_2$-δ (cytosolic phospholipase A2 δ), is an 818 amino acid calcium-dependent phospholipase that contans one PLA_2c domain, a C2 domain and exists as two alternatively spliced isoforms. A peripheral membrane protein, group IVD $sPLA_2$ is suggested to play a role in the inflammation of psoriatic lesions. Group IVD $sPLA_2$ catalyzes the reaction of phosphatidylcholine and water into 1-acylglycerophosphocholine and carboxylate.

REFERENCES

1. Mavoungou, E., et al. 1997. HIV and SIV envelope glycoproteins induce phospholipase A_2 activation in human and macaque lymphocytes. J. Acquir. Immune Defic. Syndr. Hum. Retrovirol. 16: 1-9.
2. Schröder, H.C., et al. 1998. Mechanisms of prionSc- and HIV-1 gp120 induced neuronal cell death. Neurotoxicology 19: 683-688.
3. Ishizaki, J., et al. 1999. Cloning and characterization of novel mouse and human secretory phospholipase A_2s. J. Biol. Chem. 274: 24973-24979.
4. Chiba, H., et al. 2004. Cloning of a gene for a novel epithelium-specific cytosolic phospholipase A2, $cPLA_2$δ, induced in psoriatic skin. J. Biol. Chem. 279: 12890-12897.
5. Tao, R., et al. 2005. A family based study of the genetic association between the PLA2G4D gene and schizophrenia. Prostaglandins Leukot. Essent. Fatty Acids. 73: 419-422.
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CHROMOSOMAL LOCATION

Genetic locus: Pla2g4d (mouse) mapping to 2 E5.

PRODUCT

group IVD $sPLA_2$ 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 group IVD $sPLA_2$ shRNA Plasmid (m): sc-145776-SH and group IVD $sPLA_2$ shRNA (m) Lentiviral Particles: sc-145776-V as alternate gene silencing products.

For independent verification of group IVD $sPLA_2$ (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-145776A, sc-145776B and sc-145776C.

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 IVD $sPLA_2$ siRNA (m) is recommended for the inhibition of group IVD $sPLA_2$ 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

group IVD $sPLA_2$ (H-6): sc-398758 is recommended as a control antibody for monitoring of group IVD $sPLA_2$ 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 group IVD $sPLA_2$ gene expression knockdown using RT-PCR Primer: group IVD $sPLA_2$ (m)-PR: sc-145776-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.