SANTA CRUZ BIOTECHNOLOGY, INC.

group XIIA sPLA$_2$ siRNA (h): sc-89136

BACKGROUND

Secreted phospholipases A_2 (sPLA$_2$s) form a large family of structurally related enzymes, which are widespread in nature. Snake venoms have been known for decades to contain a tremendous molecular diversity of sPLA$_2$s, which can exert a myriad of toxic and pharmacological effects. Secreted phospholipase A_2 enzymes liberate arachidonic acid from phospholipids for production of eicosanoids and exert a variety of physiologic and pathologic effects. Group XII sPLA$_2$s, such as group XIIA sPLA$_2$, have relatively low specific activity and are structurally and functionally distinct from other sPLA$_2$s. Group XIIA sPLA$_2$, also known as GXII, ROSSY, PLA2G12 or PLA2G12A, is a 189 amino acid secreted protein that localizes to the cytoplasm. Belonging to the phospholipase A_2 family, group XIIA sPLA$_2$ is abundantly expressed in heart, skeletal muscle, kidney, liver and pancreas.

REFERENCES

1. Lambeau, G. and Lazdunski, M. 1999. Receptors for a growing family of secreted phospholipases A_2. Trends Pharmacol. Sci. 20: 162-170.
2. Valentin, E. and Lambeau, G. 2000. Increasing molecular diversity of secreted phospholipases A_2 and their receptors and binding proteins. Biochim. Biophys. Acta 1488: 59-70.
3. Hanasaki, K. and Arita, H. 2002. Phospholipase A_2 receptor: a regulator of biological functions of secretory phospholipase A_2. Prostaglandins Other Lipid Mediat. 68-69: 71-82.
4. Hanasaki, K. 2004. Mammalian phospholipase A_2: phospholipase A_2 receptor. Biol. Pharm. Bull. 27: 1165-1167.
5. Huhtinen, H.T., et al. 2006. Antibacterial effects of human group IIA and group XIIA phospholipase A_2 against *Helicobacter pylori in vitro.* APMIS 114: 127-130.
6. Ni, Z., et al. 2006. Intracellular actions of group IIA secreted phospholipase A_2 and group IVA cytosolic phospholipase A_2 contribute to arachidonic acid release and prostaglandin production in rat gastric mucosal cells and transfected human embryonic kidney cells. J. Biol. Chem. 281: 16245-16255.

CHROMOSOMAL LOCATION

Genetic locus: PLA2G12A (human) mapping to 4q25.

PRODUCT

group XIIA sPLA$_2$ siRNA (h) 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 XIIA sPLA$_2$ shRNA Plasmid (h): sc-89136-SH and group XIIA sPLA$_2$ shRNA (h) Lentiviral Particles: sc-89136-V as alternate gene silencing products.

For independent verification of group XIIA sPLA$_2$ (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-89136A, sc-89136B and sc-89136C.

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 XIIA sPLA$_2$ siRNA (h) is recommended for the inhibition of group XIIA sPLA$_2$ expression in human 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 XIIA sPLA$_2$ (E-9): sc-514423 is recommended as a control antibody for monitoring of group XIIA 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 XIIA sPLA$_2$ gene expression knockdown using RT-PCR Primer: group XIIA sPLA$_2$ (h)-PR: sc-89136-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.