SANTA CRUZ BIOTECHNOLOGY, INC.

TXA2R siRNA (h): sc-40226

BACKGROUND

Thromboxane A_2 (TXA2), the major cyclooxygenase (COX) product of arachidonic acid, stimulates platelet aggregation and is a potent vasoconstrictor. TXA2R has been implicated in several processes in normal kidney physiology as well as in myocardial infarction, atherosclerosis and bronchial asthma. TXA2 mediates its effects through the TXA2 receptor (TXA2R), a G protein-coupled receptor that activates phospholipase C (PLC) to mobilize intracellular calcium stores. Alternatively, TXA2R activates the MAP kinase pathway in response to dibutyryl cyclic AMP (dbcAMP). The human TXA2R gene maps to chromosome 19p13.3 and is alternatively spliced to produce proteins which differ in the carboxy-termini. TXA2R is expressed in platelets, endothelium, placenta, vascular smooth muscles and the renal cortex. Mutations in the gene encoding TXA2R lead to several bleeding disorders due to either impaired coupling between the receptor and PLC or impaired binding to TXA2. Also, the TXA2R protein may be involved in mediating renal damage in disease states, controlling the initiation and/or progression of labor in women, and providing therapeutic value for treatment of acute pancreatitis.

REFERENCES

1. Swanson, M.L., et al. 1992. The expression of thromboxane A_2 synthase and thromboxane A_2 receptor gene in human uterus. Biol. Reprod. 47: 105-117.
2. Reilly, M., et al. 1993. Cellular activation by thromboxane A_2 and other eicosanoids. Eur. Heart J. 14: 88-93.
3. Nusing, R.M., et al. 1993. Characterization and chromosomal mapping of the human thromboxane A_2 receptor gene. J. Biol. Chem. 268: 25253-25259.
4. Raychowdhury, M.K., et al. 1994. Alternative splicing produces a divergent cytoplasmic tail in the human endothelial thromboxane A_2 receptor. J. Biol. Chem. 269: 19256-19261.

CHROMOSOMAL LOCATION

Genetic locus: TBXA2R (human) mapping to 19p13.3.

PRODUCT

TXA2R siRNA (h) is a target-specific 19-25 nt siRNA 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 TXA2R shRNA Plasmid (h): sc-40226-SH and TXA2R shRNA (h) Lentiviral Particles: sc-40226-V as alternate gene silencing 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

TXA2R siRNA (h) is recommended for the inhibition of TXA2R 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

TXA2R (G-2): sc-515033 is recommended as a control antibody for monitoring of TXA2R 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 TXA2R gene expression knockdown using RT-PCR Primer: TXA2R (h)-PR: sc-40226-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Del Turco, S., et al. 2014. Involvement of the TP receptor in TNF-α-induced endothelial tissue factor expression. Vascul. Pharmacol. 62: 49-56.
2. Wang, W., et al. 2018. Genistein ameliorates non-alcoholic fatty liver disease by targeting the thromboxane A_2 pathway. J. Agric. Food Chem. 66: 5853-5859.
3. Xie, X., et al. 2017. Activation of thromboxane A_2 receptors mediates endothelial dysfunction in diabetic mice. Clin. Exp. Hypertens. 39: 312-318.

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.