

# TXA2R (G-2): sc-515033

## BACKGROUND

Thromboxane A<sub>2</sub> (TXA<sub>2</sub>), the major cyclooxygenase (COX) product of arachidonic acid, stimulates platelet aggregation and is a potent vasoconstrictor. TXA<sub>2</sub>R has been implicated in several processes in normal kidney physiology as well as in myocardial infarction, atherosclerosis and bronchial asthma. TXA<sub>2</sub> mediates its effects through the TXA<sub>2</sub> receptor (TXA<sub>2</sub>R), a G protein-coupled receptor that activates phospholipase C (PLC) to mobilize intracellular calcium stores. Alternatively, TXA<sub>2</sub>R activates the MAP kinase pathway in response to dibutyl cyclic AMP (dbcAMP). The human TXA<sub>2</sub>R gene maps to chromosome 19p13.3 and is alternatively spliced to produce proteins which differ in the carboxy termini. TXA<sub>2</sub>R is expressed in platelets, endothelium, placenta, vascular smooth muscles and the renal cortex. Mutations in the gene encoding TXA<sub>2</sub>R lead to several bleeding disorders due to either impaired coupling between the receptor and PLC or impaired binding to TXA<sub>2</sub>. Also, the TXA<sub>2</sub>R 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

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

## CHROMOSOMAL LOCATION

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

## SOURCE

TXA<sub>2</sub>R (G-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 221-240 within an internal region of TXA<sub>2</sub>R of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>3</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515033 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

TXA<sub>2</sub>R (G-2) is recommended for detection of TXA<sub>2</sub>R long and short isoforms of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TXA<sub>2</sub>R siRNA (h): sc-40226, TXA<sub>2</sub>R shRNA Plasmid (h): sc-40226-SH and TXA<sub>2</sub>R shRNA (h) Lentiviral Particles: sc-40226-V.

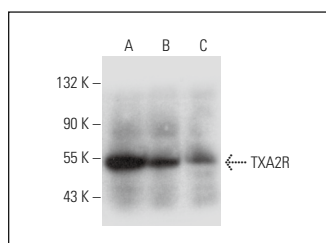
Molecular Weight of TXA<sub>2</sub>R: 55/58 kDa.

Positive Controls: JAR cell lysate: sc-2276, HUV-EC-C whole cell lysate: sc-364180 or ECV304 cell lysate: sc-2269.

## RECOMMENDED SUPPORT REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



TXA<sub>2</sub>R (G-2): sc-515033. Western blot analysis of TXA<sub>2</sub>R expression in ECV304 (A), JAR (B) and HUV-EC-C (C) whole cell lysates.

## SELECT PRODUCT CITATIONS

- Butenas, A.L.E., et al. 2020. No effect of endoperoxide 4 or thromboxane A<sub>2</sub> receptor blockade on static mechanoreflex activation in rats with heart failure. *Exp. Physiol.* 105: 1840-1854.
- Butenas, A.L.E., et al. 2021. Thromboxane A<sub>2</sub> receptors contribute to the exaggerated exercise pressor reflex in male rats with heart failure. *Physiol. Rep.* 9: e15052.

## RESEARCH USE

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