SANTA CRUZ BIOTECHNOLOGY, INC.

IP Receptor (B-3): sc-365268



BACKGROUND

Cyclooxygenases metabolize arachidonate to five primary prostanoids: PGE2, PGF2 α , PGI2, TXA2 and PGD2. These lipid mediators interact with specific members of G protein-coupled prostanoid receptors, designated EP, FP, IP, TP and DP, respectively. The IP Receptor binds prostacyclin, PGI2, the main prostanoid synthesized by vascular tissues. First discovered in 1976, prostacyclin is involved in platelet aggregation inhibition, vasodilatation and cytoprotection, and either prostacyclin or its analogs are used in the treatment of hypertension. Upon binding to the IP Receptor, prostacyclin activates adenylate cyclase primarily through the Gas protein. The gene encoding the human IP Receptor is located on chromosome 19q13.32. It is expressed as a glycosylated and phosphorylated protein, which is abundantly expressed in vascular tissues such as aorta, lung, atrium and ventricle, as well as in kidney, thymus, spleen and neurons.

REFERENCES

- 1. Botting, R., et al. 1989. Vasoactive mediators derived from the endothelium. Arch. Mal. Coeur Vaiss. 82: 11-14.
- Grant, S.M., et al. 1992. Iloprost. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic potential in peripheral vascular disease, myocardial ischaemia and extracorporeal circulation procedures. Drugs 43: 889-924.

CHROMOSOMAL LOCATION

Genetic locus: PTGIR (human) mapping to 19q13.32; Ptgir (mouse) mapping to 7 A2.

SOURCE

IP Receptor (B-3) is a mouse monoclonal antibody raised against amino acids 291-386 of IP Receptor of human origin.

PRODUCT

Each vial contains 200 $\mu g~lgG_{2b}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

IP Receptor (B-3) is recommended for detection of IP Receptor of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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 IP Receptor siRNA (h): sc-40175, IP Receptor siRNA (m): sc-40176, IP Receptor shRNA Plasmid (h): sc-40175-SH, IP Receptor shRNA Plasmid (m): sc-40176-SH, IP Receptor shRNA (h) Lentiviral Particles: sc-40175-V and IP Receptor shRNA (m) Lentiviral Particles: sc-40176-V.

Molecular Weight of IP Receptor: 42 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, WI-38 whole cell lysate: sc-364260 or K-562 whole cell lysate: sc-2203.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-lgG K BP-HRP: sc-516102 or m-lgG K 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-lgG K BP-FITC: sc-516140 or m-lgG K 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





IP Receptor (B-3): sc-365268. Western blot analysis of IP Receptor expression in K-562 (A), WI-38 (B), NTERA-2 cl.D1 (C), NIH/3T3 (D) and AMJ2-C8 (E) whole cell lysates and rat lung tissue extract (F).

IP Receptor (B-3): sc-365268. Fluorescent western blot analysis of IP Receptor expression in NTERA-2 cl.D1 (A), NIH/373 (B) and AMJ2-C8 (C) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-lgG_{2b} BP-CFL 48: sc-542745.

SELECT PRODUCT CITATIONS

- Gonzaléz-Candia, A., et al. 2019. Melatonin long-lasting beneficial effects on pulmonary vascular reactivity and redox balance in chronic hypoxic ovine neonates. J. Pineal Res. 68: e12613.
- Aguilar, S.A., et al. 2019. Melatonin modulates the expression of pulmonary prostanoids. Rev. Med. Chil. 147: 281-288.
- Li, Z., et al. 2021. Prostacyclin facilitates vascular smooth muscle cell phenotypic transformation via activating TP receptors when IP receptors are deficient. Acta Physiol. 231: e13555.
- Kunioku, Y., et al. 2023. Intracellular cAMP signaling pathway via G_s protein-coupled receptor activation in rat primary cultured trigeminal ganglion cells. Biomedicines 11: 2347.
- Kitayama, E., et al. 2023. Functional expression of IP, 5-HT4, D1, A2A, and VIP receptors in human odontoblast cell line. Biomolecules 13: 879.
- Zhang, Y., et al. 2024. Prostaglandin I₂ signaling prevents angiotensin II-induced atrial remodeling and vulnerability to atrial fibrillation in mice. Cell. Mol. Life Sci. 81: 264.

STORAGE

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

RESEARCH USE

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