

EP4 (C-18): sc-16022

BACKGROUND

Prostaglandin E₂, a member of the autacoid family of lipid mediators, is a major renal cyclooxygenase product of arachidonic acid metabolism. Prostaglandin E₂ binds to four G protein-coupled E-prostanoid receptors, designated EP1, EP2, EP3 and EP4. The expression and function of the prostaglandin E₂ receptors have been highly characterized in kidney. EP1, which is predominantly expressed in the collecting duct, couples to G_q proteins to inhibit sodium absorption and increase in intracellular calcium, which act as second messengers. EP2 is coupled to G_s proteins, which stimulate adenylyl cyclase. EP2 has the lowest expression in kidney, but EP2 knockout mice exhibit salt-sensitive hypertension, which suggests a role for EP2 in salt excretion. EP3 is expressed in renal vessels, thick ascending limb and collecting duct. EP3 has at least six alternative splice variants that couple to G_i proteins to inhibit cAMP, which subsequently inhibit sodium and water transport. In uterus, EP3 induces the contraction of uterine smooth muscles. EP4 is expressed in glomerulus and collecting duct. It couples to G_s proteins, which stimulate adenylyl cyclase and regulate glomerular tone and renal renin release.

CHROMOSOMAL LOCATION

Genetic locus: PTGER4 (human) mapping to 5p13.1; Ptger4 (mouse) mapping to 15 A1.

SOURCE

EP4 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of EP4 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16022 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EP4 (C-18) is recommended for detection of EP4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

EP4 (C-18) is also recommended for detection of EP4 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for EP4 siRNA (h): sc-40173, EP4 siRNA (m): sc-40174, shRNA Plasmid (h): sc-40173-SH, EP4 shRNA Plasmid (m): sc-40174-SH, shRNA (h) Lentiviral Particles: sc-40173-V and EP4 shRNA (m) Lentiviral Particles: sc-40174-V.

Molecular Weight of EP4: 53 kDa.

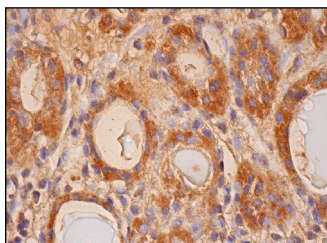
STORAGE

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.

DATA



EP4 (C-18): sc-16022. Immunoperoxidase staining of formalin fixed, paraffin-embedded human thyroid gland tissue showing cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

- Muller-Decker, K., et al. 2002. Transgenic cyclooxygenase-2 overexpression sensitizes mouse skin for carcinogenesis. *Proc. Natl. Acad. Sci. USA* 99: 12483-12488.
- Baratelli, F.E., et al. 2004. Prostaglandin E₂-dependent enhancement of tissue inhibitors of metalloproteinases-1 production limits dendritic cell migration through extracellular matrix. *J. Immunol.* 173: 5458-5466.
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- Bachar, O., et al. 2005. TNF α reduces tachykinin, PGE₂-dependent, relaxation of the cultured mouse trachea by increasing the activity of COX-2. *Br. J. Pharmacol.* 144: 220-230.
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- Grasa, L., et al. 2006. PGE₂ receptors and their intracellular mechanisms in rabbit small intestine. *Prostaglandins Other Lipid Mediat.* 79: 206-217.
- Sirianni, R., et al. 2009. Inhibition of cyclooxygenase-2 down-regulates aromatase activity and decreases proliferation of Leydig tumor cells. *J. Biol. Chem.* 284: 28905-28916.
- Ponglowhapan, S., et al. 2010. Expression of prostaglandin E₂ receptor subtypes in the canine lower urinary tract varies according to the gonadal status and gender. *Theriogenology* 74: 1450-1466.


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