

EP2 (G-20): sc-33984

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, which is expressed in renal vessels, thick ascending limb and collecting duct, 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.

REFERENCES

1. Breyer, M.D., et al. 1998. Regulation of renal function by prostaglandin E receptors. *Kidney Int. Suppl.* 67: S88-94.
2. Ichikawa, A. 1998. Molecular biology of prostaglandin E receptors—expression of multi-function by PGE receptor subtypes and isoforms. *Nippon Rinsho* 56: 1813-1818.
3. Thiemermann, C. and Zacharowski, K. 2000. Selective activation of E-type prostanoid 3 receptors reduces myocardial infarct size. A novel insight into the cardioprotective effects of prostaglandins. *Pharmacol. Ther.* 87: 61-67.
4. Muro, S., et al. 2000. Expression of prostaglandin E receptor EP₄ subtype in rat adrenal zona glomerulosa: involvement in aldosterone release. *Endocr. J.* 47: 429-436.
5. Kotani, M., et al. 2000. Multiple signal transduction pathways through two prostaglandin E receptor EP₃ subtype isoforms expressed in human uterus. *J. Clin. Endocrinol. Metab.* 85: 4315-4322.

CHROMOSOMAL LOCATION

Genetic locus: PTGER2 (human) mapping to 14q22.

SOURCE

EP2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an N-terminal extracellular domain of EP2 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-33984 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EP2 (G-20) is recommended for detection of EP2 of human origin by Western Blotting (starting dilution 1:200, 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 EP2 siRNA (h): sc-40171, EP2 shRNA Plasmid (h): sc-40171-SH and EP2 shRNA (h) Lentiviral Particles: sc-40171-V.

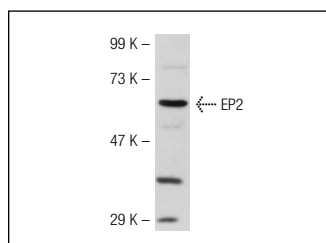
Molecular Weight of EP2: 68 kDa.

Positive Controls: JAR cell lysate: sc-2276, JEG-3 whole cell lysate or WI 38 cell lysate.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



EP2 (G-20): sc-33984. Western blot analysis of EP2 expression in JAR whole cell lysate.

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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.