SANTA CRUZ BIOTECHNOLOGY, INC.

EP2 (E-13): sc-22196

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

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. 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: PTGER2 (human) mapping to 14q22.1; Ptger2 (mouse) mapping to 14 C1.

SOURCE

EP2 (E-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an 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-22196 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

EP2 (E-13) is recommended for detection of EP2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

EP2 (E-13) is also recommended for detection of EP2 in additional species, including canine and bovine.

Suitable for use as control antibody for EP2 siRNA (h): sc-40171, EP2 siRNA (m): sc-40172, EP2 siRNA (r): sc-45910, EP2 shRNA Plasmid (h): sc-40171-SH, EP2 shRNA Plasmid (m): sc-40172-SH, EP2 shRNA Plasmid (r): sc-45910-SH, EP2 shRNA (h) Lentiviral Particles: sc-40171-V, EP2 shRNA (m) Lentiviral Particles: sc-40172-V and EP2 shRNA (r) Lentiviral Particles: sc-45910-V.

Molecular Weight of EP2: 68 kDa.

Positive Controls: JAR cell lysate: sc-2276, JEG-3 whole cell lysate: sc-364255 or NRK whole cell lysate: sc-364197.

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) 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.

SELECT PRODUCT CITATIONS

1. 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.

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.