

EP1 (E-16): sc-22648

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.

CHROMOSOMAL LOCATION

Genetic locus: PTGER1 (human) mapping to 19p13.12; Ptger1 (mouse) mapping to 8 C2.

SOURCE

EP1 (E-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of EP1 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-22648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EP1 (E-16) is recommended for detection of EP1 of mouse, rat and 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).

EP1 (E-16) is also recommended for detection of EP1 in additional species, including porcine.

Suitable for use as control antibody for EP1 siRNA (h): sc-40169, EP1 siRNA (m): sc-40170, EP1 shRNA Plasmid (h): sc-40169-SH, EP1 shRNA Plasmid (m): sc-40170-SH, EP1 shRNA (h) Lentiviral Particles: sc-40169-V and EP1 shRNA (m) Lentiviral Particles: sc-40170-V.

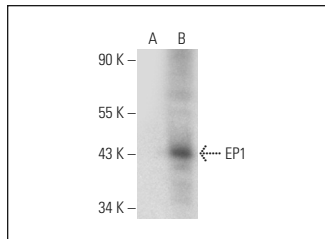
Molecular Weight of EP1: 42 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224, KNRK whole cell lysate: sc-2214 or EP1 (h): 293T Lysate: sc-112596.

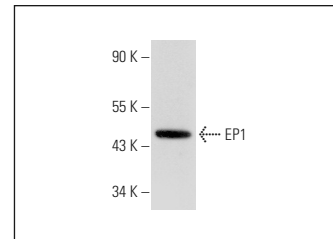
RECOMMENDED SECONDARY REAGENTS

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



EP1 (E-16): sc-22648. Western blot analysis of EP1 expression in non-transfected: sc-117752 (A) and human EP1 transfected: sc-112596 (B) 293T whole cell lysates.



EP1 (E-16): sc-22648. Western blot analysis of EP1 expression in KNRK whole cell lysate.

SELECT PRODUCT CITATIONS

- Sanuki, R., et al. 2007. Effect of compressive force on the production of prostaglandin E₂ and its receptors in osteoblastic Saos-2 cells. *Connect. Tissue Res.* 48: 246-253.
- Watanabe, Y., et al. 2009. IL-1β stimulates the expression of prostaglandin receptor EP4 in human chondrocytes by increasing production of prostaglandin E₂. *Connect. Tissue Res.* 50: 186-193.
- 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.
- Palazzo, E., et al. 2011. EP1 receptor within the ventrolateral periaqueductal grey controls thermnociception and rostral ventromedial medulla cell activity in healthy and neuropathic rat. *Mol. Pain* 7: 82.

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.