

## EP3 (H-200): sc-20676

### 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<sub>q</sub> proteins to inhibit sodium absorption and increase in intracellular calcium, which act as second messengers. EP2 is coupled to G<sub>s</sub> 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<sub>i</sub> 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<sub>s</sub> proteins, which stimulate adenylyl cyclase and regulate glomerular tone and renal renin release.

### CHROMOSOMAL LOCATION

Genetic locus: PTGER3 (human) mapping to 1p31.1; Ptger3 (mouse) mapping to 3 H4.

### SOURCE

EP3 (H-200) is a rabbit polyclonal antibody raised against amino acids 1-200 of EP3 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.

### RESEARCH USE

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

### APPLICATIONS

EP3 (H-200) is recommended for detection of all EP3 isoforms 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), 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).

EP3 (H-200) is also recommended for detection of all EP3 isoforms in additional species, including equine, canine and porcine.

Suitable for use as control antibody for EP3 siRNA (h): sc-35314, EP3 siRNA (m): sc-35315, EP3 shRNA Plasmid (h): sc-35314-SH, EP3 shRNA Plasmid (m): sc-35315-SH, EP3 shRNA (h) Lentiviral Particles: sc-35314-V and EP3 shRNA (m) Lentiviral Particles: sc-35315-V.

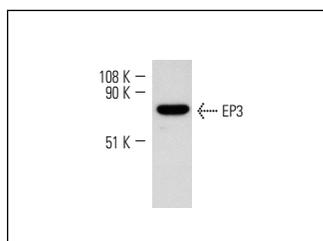
Molecular Weight of EP3: 62 kDa.

Positive Controls: JAR cell lysate: sc-2276, rat kidney extract: sc-2394 or HeLa whole cell lysate: sc-2200.

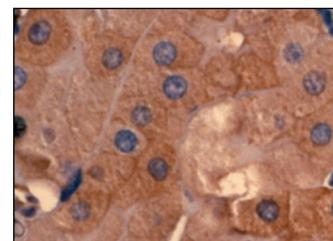
### RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

### DATA



EP3 (H-200): sc-20676. Western blot analysis of EP3 expression in JAR whole cell lysate.



EP3 (H-200): sc-20676. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse kidney tissue showing membrane and cytoplasmic localization.

### SELECT PRODUCT CITATIONS

1. Watanabe, Y., et al. 2009. IL-1 $\beta$  stimulates the expression of prostaglandin receptor EP4 in human chondrocytes by increasing production of prostaglandin E2. *Connect. Tissue Res.* 50: 186-193.
2. Wu, C.H., et al. 2010. EP4 upregulation of Ras signaling and feedback regulation of Ras in human colon tissues and cancer cells. *Arch. Toxicol.* 84: 731-740.
3. Ikeda-Matsuo, Y., et al. 2011. Inhibition of prostaglandin E2 EP3 receptors improves stroke injury via anti-inflammatory and anti-apoptotic mechanisms. *J. Neuroimmunol.* 238: 34-43.

### STORAGE

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

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Try **EP3 (5F5): sc-57105**, our highly recommended monoclonal alternative to EP3 (H-200).