

EP4 (H-160): sc-20677

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

SOURCE

EP4 (H-160) is a rabbit polyclonal antibody raised against amino acids 329-488 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.

APPLICATIONS

EP4 (H-160) 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), 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). EP4 (H-160) is also recommended for detection of EP4 in additional species, including equine, canine, bovine and porcine.

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

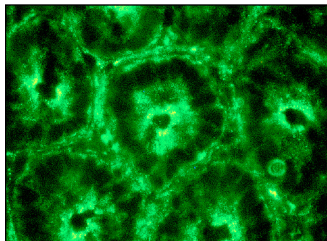
Molecular Weight of EP4: 53 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or KNRK whole cell lysate: sc-2214.

STORAGE

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

DATA



EP4 (H-160): sc-20677. Immunofluorescence staining of normal mouse intestine frozen section showing membrane staining.



EP4 (H-160): sc-20677. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic and membrane staining of myocytes.

SELECT PRODUCT CITATIONS

1. 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.
2. Xu, H.M., et al. 2007. Effects and mechanisms of total glucosides of paeony on adjuvant arthritis in rats. *J. Ethnopharmacol.* 109: 442-448.
3. Fabricius, D., et al. 2010. Prostaglandin E₂ inhibits IFN- α secretion and Th1 costimulation by human plasmacytoid dendritic cells via E-prostanoid 2 and E-prostanoid 4 receptor engagement. *J. Immunol.* 184: 677-684.
4. 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.
5. Majumder, M., et al. 2014. Prostaglandin E₂ receptor EP4 as the common target on cancer cells and macrophages to abolish angiogenesis, lymphangiogenesis, metastasis, and stem-like cell functions. *Cancer Sci.* 105: 1142-1151.
6. Haidar, M., et al. 2015. Transforming growth factor β 2 promotes transcription of COX2 and EP4, leading to a prostaglandin E₂-driven autostimulatory loop that enhances virulence of *Theileria annulata*-transformed macrophages. *Infect. Immun.* 83: 1869-1880.

RESEARCH USE

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

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Try **EP4 (C-4): sc-55596**, our highly recommended monoclonal alternative to EP4 (H-160). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **EP4 (C-4): sc-55596**.