EP3 (5F5): sc-57105

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 prostanoioid 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\textsubscript{q} proteins to inhibit sodium absorption and increase in intracellular calcium, which act as second messengers. EP2 is coupled to G\textsubscript{q} 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\textsubscript{q} 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\textsubscript{q} proteins, which stimulate adenylyl cyclase and regulate glomerular tone and renal renin release.

REFERENCES


CHROMOSOMAL LOCATION

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

SOURCE

EP3 (5F5) is a mouse monoclonal antibody raised against recombinant EP3 of human origin.

PRODUCT

Each vial contains 50 μg IgG\textsubscript{k} kappa light chain in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

EP3 (5F5) is recommended for detection of EP3 of mouse, rat, human and bovine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)].


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

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG\textsubscript{k} BP-HRP: sc-516102 or m-IgG\textsubscript{k} BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker\textsuperscript{TM} Molecular Weight Standards: sc-2035, UltraCruz\textsuperscript{®} Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA

![EP3 (5F5) Western blot analysis of EP3 expression in rat kidney tissue extract.](image1)

![EP3 (5F5) sc-57105. Western blot analysis of EP3 expression in pig brain tissue extract.](image2)

SELECT PRODUCT CITATIONS


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.