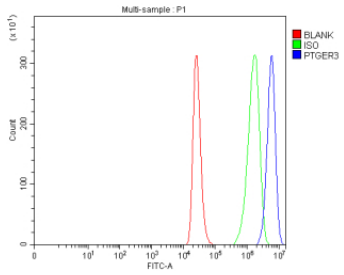
PTGER3 Antibody / Prostaglandin E2 receptor EP3 (FY13382)

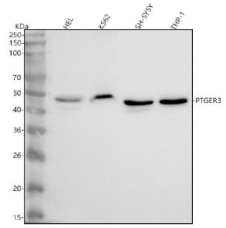
Catalog No.	Formulation	Size
FY13382	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P43115
Applications	Western Blot: 0.25-0.5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This PTGER3 antibody is available for research use only.



Flow Cytometry analysis of human THP-1 cells using anti-PTGER3 antibody. Overlay histogram showing THP-1 cells stained with (Blue line). The cells were fixed with 4% paraformaldehyde and blocked with 10% normal goat serum. And then incubated with rabbit anti-PTGER3 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of PTGER3 using anti-PTGER3 antibody. Lane 1: human HEL whole cell lysates, Lane 2: human K562 whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: human THP-1 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-PTGER3 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. PTGER3 antibody detects a major band at approximately 43 kDa, the expected size of the EP3 receptor. HEL and K562 lysates show a slightly higher migrating band, consistent with documented PTGER3 isoform diversity and cell-type-dependent glycosylation reported for this GPCR.

Description

PTGER3 antibody detects Prostaglandin E2 receptor EP3 subtype, a G protein-coupled receptor (GPCR) encoded by the PTGER3 gene located on chromosome 1p31.1. PTGER3 mediates the biological effects of prostaglandin E2 (PGE2), a key lipid signaling molecule involved in inflammation, pain perception, smooth muscle contraction, and thermoregulation. The EP3 receptor is unique among the four PGE2 receptor subtypes (EP1-EP4) because of its multiple isoforms generated through alternative splicing, each coupling to different G proteins (Gi, Gs, or Gq) and eliciting diverse downstream responses.

Structurally, PTGER3 is a seven-transmembrane GPCR with extracellular ligand-binding domains and intracellular loops that interact with heterotrimeric G proteins. It belongs to the rhodopsin-like GPCR family, sharing sequence homology with other prostanoid receptors. Co-localization studies show PTGER3 localized on the plasma membrane of smooth muscle cells, immune cells, and neurons. The receptorÃ¯Â¿Â½s cytoplasmic tail contains regions that determine isoform-specific signaling and regulatory properties.

Functionally, PTGER3 mediates PGE2-dependent inhibition of adenylate cyclase via Gi coupling, leading to decreased intracellular cAMP levels. In smooth muscle, this signaling pathway promotes contraction, contributing to uterine and gastrointestinal motility. In the central nervous system, PTGER3 influences fever generation and pain modulation through hypothalamic pathways. The receptor also regulates renal sodium excretion, vascular tone, and platelet aggregation. Known ligands include PGE2 and selective agonists such as sulprostone and misoprostol.

PTGER3 expression is widespread but particularly high in uterus, kidney, stomach, and brain. Dysregulation of PTGER3 has been associated with inflammatory diseases, reproductive disorders, and cancer. Overexpression contributes to tumor progression by promoting angiogenesis and immune evasion, while inhibition reduces inflammation and hyperalgesia. Pathway associations include prostaglandin signaling, GPCR-mediated calcium signaling, and cAMP regulation. During development, PTGER3 contributes to uterine contractility and thermoregulatory responses.

The PTGER3 antibody from NSJ Bioreagents is a reliable reagent for studying prostaglandin signaling, GPCR pharmacology, and inflammatory regulation.

Application Notes

Optimal dilution of the PTGER3 antibody should be determined by the researcher.

Immunogen

E.coli-derived human PTGER3 recombinant protein (Position: K2-R390) was used as the immunogen for the PTGER3 antibody.

Storage

After reconstitution, the PTGER3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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