

Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP52246**Specification****Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Product Information**

Application	WB, IHC-P
Primary Accession	Q05769
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal

Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Additional Information**Gene ID** 19225**Other Names**

COX2; Cox-2; PHS-2; Pghs2; TIS1; PGHS-2; Prostaglandin G/H synthase 2; Cyclooxygenase-2; Glucocorticoid-regulated inflammatory cyclooxygenase; Gripghs; Macrophage activation-associated marker protein P71/73; PES-2; PHS II; Prostaglandin H2 synthase 2; PGH synthase 2; Prostaglandin-endoperoxide synthase 2; TIS1 protein; PtgS2; Pghs-b

Dilution

WB~1:100~1:500<br \>IHC-P~1:100~1:500

Format

0.01M TBS(pH7.4), 0.09% (W/V) sodium azide and 50% Glyce

Storage

Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Protein Information**Name** PtgS2 {ECO:0000312|MGI:MGI:97798}**Function**

Dual cyclooxygenase and peroxidase in the biosynthesis pathway of prostanoids, a class of C20 oxylipins mainly derived from arachidonate, with a particular role in the inflammatory response (PubMed: [22942274](http://www.uniprot.org/citations/22942274), PubMed: [12925531](http://www.uniprot.org/citations/12925531), PubMed: [20463020](http://www.uniprot.org/citations/20463020), PubMed: [20810665](http://www.uniprot.org/citations/20810665), PubMed: [21489986](http://www.uniprot.org/citations/21489986)). The cyclooxygenase activity oxygenates arachidonate (AA, C20:4(n-6)) to the hydroperoxy endoperoxide prostaglandin G2 (PGG2), and the peroxidase activity reduces PGG2 to the hydroxy endoperoxide PGH2, the precursor of all 2-series prostaglandins and thromboxanes. This complex

transformation is initiated by abstraction of hydrogen at carbon 13 (with S-stereochemistry), followed by insertion of molecular O₂ to form the endoperoxide bridge between carbon 9 and 11 that defines prostaglandins. The insertion of a second molecule of O₂ (bis-oxygenase activity) yields a hydroperoxy group in PGG₂ that is then reduced to PGH₂ by two electrons (PubMed:22942274, PubMed:12925531, PubMed:20463020, PubMed:20810665, PubMed:21489986). Similarly catalyzes successive cyclooxygenation and peroxidation of dihomo-gamma-linoleate (DGLA, C20:3(n-6)) and eicosapentaenoate (EPA, C20:5(n-3)) to corresponding PGH₁ and PGH₃, the precursors of 1- and 3- series prostaglandins (By similarity). In an alternative pathway of prostanoid biosynthesis, converts 2-arachidonoyl lysophospholipids to prostanoid lysophospholipids, which are then hydrolyzed by intracellular phospholipases to release free prostanoids (By similarity). Metabolizes 2-arachidonoyl glycerol yielding the glyceryl ester of PGH₂, a process that can contribute to pain response (By similarity). Generates lipid mediators from n-3 and n-6 polyunsaturated fatty acids (PUFAs) via a lipoxygenase-type mechanism. Oxygenates PUFAs to hydroperoxy compounds and then reduces them to corresponding alcohols (By similarity). Plays a role in the generation of resolution phase interaction products (resolvins) during both sterile and infectious inflammation. Metabolizes docosahexaenoate (DHA, C22:6(n-3)) to 17R-HDHA, a precursor of the D-series resolvins (RvDs). As a component of the biosynthetic pathway of E-series resolvins (RvEs), converts eicosapentaenoate (EPA, C20:5(n-3)) primarily to 18S-HEPE that is further metabolized by ALOX5 and LTA4H to generate 18S-RvE1 and 18S-RvE2. In vascular endothelial cells, converts docosapentaenoate (DPA, C22:5(n-3)) to 13R-HDPA, a precursor for 13-series resolvins (RvTs) shown to activate macrophage phagocytosis during bacterial infection (By similarity). In activated leukocytes, contributes to oxygenation of hydroxyeicosatetraenoates (HETE) to diHETES (5,15-diHETE and 5,11-diHETE) (By similarity). Can also use linoleate (LA, (9Z,12Z)-octadecadienoate, C18:2(n-6)) as substrate and produce hydroxyoctadecadienoates (HODEs) in a regio- and stereospecific manner, being (9R)-HODE ((9R)-hydroxy-(10E,12Z)-octadecadienoate) and (13S)-HODE ((13S)-hydroxy-(9Z,11E)-octadecadienoate) its major products (By similarity). During neuroinflammation, plays a role in neuronal secretion of specialized preresolving mediators (SPMs) 15R-lipoxin A₄ that regulates phagocytic microglia (PubMed:29662056).

Cellular Location

Microsome membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Nucleus inner membrane; Peripheral membrane protein. Nucleus outer membrane; Peripheral membrane protein. Note=Detected on the luminal side of the endoplasmic reticulum and nuclear envelope {ECO:0000250|UniProtKB:P35354}

Tissue Location

Following colon injury, expressed in the wound bed mesenchyme during the first phase of repair, probably by colonic mesenchymal stem cells (at protein level)

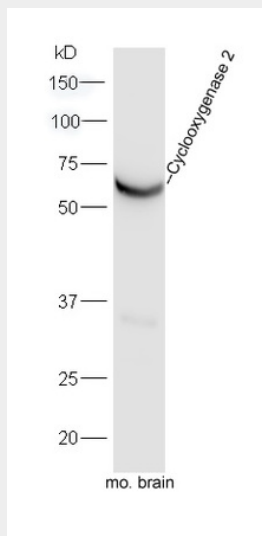
Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

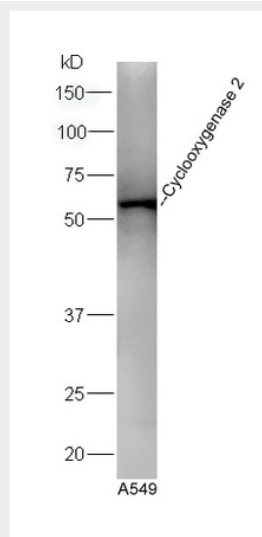
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)

- [Cell Culture](#)

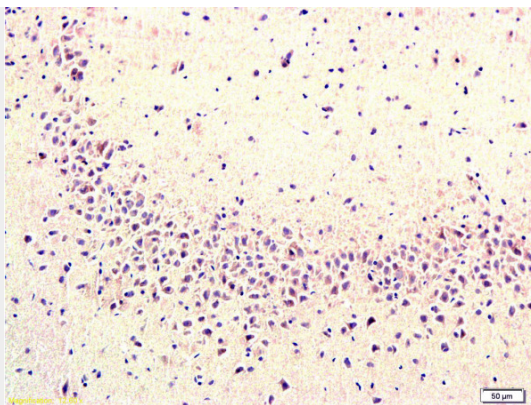
Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Images



Mouse brain lysates probed with Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody, Unconjugated (AP52246) at 1:300 overnight at 4°C. Followed by a conjugated secondary antibody at 1:5000 for 90 min at 37°C.



Human A549 lysates probed with Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody, Unconjugated AP52246 at 1:300 overnight at 4°C. Followed by a conjugated secondary antibody at 1:5000 for 90 min at 37°C.



Formalin-fixed and paraffin embedded rat brain labeled with Rabbit Anti Cyclooxygenase 2/COX2 Polyclonal Antibody, Unconjugated (AP52246) at 1:200 followed by conjugation to the secondary antibody and DAB staining

Rabbit Anti-Cyclooxygenase 2 Polyclonal Antibody - Background

Converts arachidonate to prostaglandin H₂ (PGH₂), a committed step in prostanoid synthesis. Constitutively expressed in some tissues in physiological conditions, such as the endothelium, kidney and brain, and in pathological conditions, such as in cancer. PTGS2 is responsible for production of inflammatory prostaglandins. Up-regulation of PTGS2 is also associated with increased cell adhesion, phenotypic changes, resistance to apoptosis and tumor angiogenesis. In cancer cells, PTGS2 is a key step in the production of prostaglandin E₂ (PGE₂), which plays important roles in modulating motility, proliferation and resistance to apoptosis.