

# PGHS-2 Antibody

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP51459

## Product Information

Application	WB
Primary Accession	<a href="#">P35354</a>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	68996

## Additional Information

Gene ID	5743
Other Names	Prostaglandin G/H synthase 2, Cyclooxygenase-2, COX-2, PHS II, Prostaglandin H2 synthase 2, PGH synthase 2, PGHS-2, Prostaglandin-endoperoxide synthase 2, PTGS2, COX2
Target/Specificity	KLH conjugated synthetic peptide derived from human PGHS-2
Dilution	WB~~ 1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

## Protein Information

Name	PTGS2 ( <a href="#">HGNC:9605</a> )
Function	<p>Dual cyclooxygenase and peroxidase in the biosynthesis pathway of prostanoids, a class of C20 oxylipins mainly derived from arachidonate ((5Z,8Z,11Z,14Z)-eicosatetraenoate, AA, C20:4(n-6)), with a particular role in the inflammatory response (PubMed:<a href="#">11939906</a>, PubMed:<a href="#">16373578</a>, PubMed:<a href="#">19540099</a>, PubMed:<a href="#">22942274</a>, PubMed:<a href="#">26859324</a>, PubMed:<a href="#">27226593</a>, PubMed:<a href="#">7592599</a>, PubMed:<a href="#">7947975</a>, PubMed:<a href="#">9261177</a>). The cyclooxygenase activity oxygenates AA to the hydroperoxy endoperoxide prostaglandin G2 (PGG2), and the peroxidase activity reduces PGG2 to the hydroxy endoperoxide prostaglandin H2 (PGH2), the precursor of all 2-series prostaglandins and thromboxanes (PubMed:<a href="#">16373578</a>, PubMed:<a href="#">22942274</a>, PubMed:<a href="#">26859324</a>, PubMed:<a href="#">27226593</a>, PubMed:<a href="#">7592599</a>, PubMed:<a href="#">7947975</a>, PubMed:<a href="#">9261177</a>). 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</p>

(bis-oxygenase activity) yields a hydroperoxy group in PGG<sub>2</sub> that is then reduced to PGH<sub>2</sub> by two electrons (PubMed:[16373578](#), PubMed:[22942274](#), PubMed:[26859324](#), PubMed:[27226593](#), PubMed:[7592599](#), PubMed:[7947975](#), PubMed:[9261177](#)). Similarly catalyzes successive cyclooxygenation and peroxidation of dihomo-gamma-linoleate (DGLA, C<sub>20</sub>:3(n-6)) and eicosapentaenoate (EPA, C<sub>20</sub>:5(n-3)) to corresponding PGH<sub>1</sub> and PGH<sub>3</sub>, the precursors of 1- and 3-series prostaglandins (PubMed:[11939906](#), PubMed:[19540099](#)). 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 (PubMed:[27642067](#)). Metabolizes 2-arachidonoyl glycerol yielding the glyceryl ester of PGH<sub>2</sub>, a process that can contribute to pain response (PubMed:[22942274](#)). 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 (PubMed:[11034610](#), PubMed:[11192938](#), PubMed:[9048568](#), PubMed:[9261177](#)). Plays a role in the generation of resolution phase interaction products (resolvins) during both sterile and infectious inflammation (PubMed:[12391014](#)). Metabolizes docosahexaenoate (DHA, C<sub>22</sub>:6(n-3)) to 17R-HDHA, a precursor of the D-series resolvins (RvDs) (PubMed:[12391014](#)). As a component of the biosynthetic pathway of E- series resolvins (RvEs), converts eicosapentaenoate (EPA, C<sub>20</sub>:5(n-3)) primarily to 18S-HEPE that is further metabolized by ALOX<sub>5</sub> and LTA<sub>4</sub>H to generate 18S-RvE<sub>1</sub> and 18S-RvE<sub>2</sub> (PubMed:[21206090](#)). In vascular endothelial cells, converts docosapentaenoate (DPA, C<sub>22</sub>:5(n-3)) to 13R- HDPA, a precursor for 13-series resolvins (RvTs) shown to activate macrophage phagocytosis during bacterial infection (PubMed:[26236990](#)). In activated leukocytes, contributes to oxygenation of hydroxyeicosatetraenoates (HETE) to diHETES (5,15-diHETE and 5,11- diHETE) (PubMed:[22068350](#), PubMed:[26282205](#)). Can also use linoleate (LA, (9Z,12Z)-octadecadienoate, C<sub>18</sub>: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 A<sub>4</sub> that regulates phagocytic microglia (By similarity).

## 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

## Background

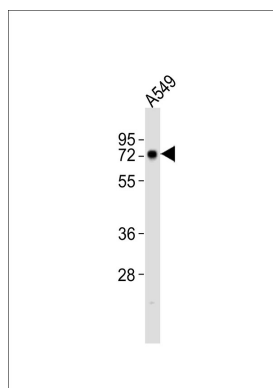
Critical component of colonic mucosal wound repair (By similarity). Mediates the formation of prostaglandins from arachidonate. May have a role as a major mediator of inflammation and/or a role for prostanoid signaling in activity-dependent plasticity.

## References

- Jones D.A.,et al.J. Biol. Chem. 268:9049-9054(1993).  
Hla T.,et al.Proc. Natl. Acad. Sci. U.S.A. 89:7384-7388(1992).  
Kosaka T.,et al.Eur. J. Biochem. 221:889-897(1994).  
Appleby S.B.,et al.Biochem. J. 302:723-727(1994).  
Sharma S.V.,et al.Submitted (NOV-2003) to the EMBL/GenBank/DDBJ databases.

## Images

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Anti-PGHS-2 Antibody at 1:1000 dilution + A549 whole cell lysates. Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 69 kDa. Blocking/Dilution buffer: 5% NFDm/TBST.

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