

**Anti-COX2/Cyclooxygenase 2 Antibody**  
Catalog # ABO10592**Specification****Anti-COX2/Cyclooxygenase 2 Antibody - Product Information**

Application	WB, IHC
Primary Accession	<a href="#">P35354</a>
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

**Description**

Rabbit IgG polyclonal antibody for Prostaglandin G/H synthase 2 (PTGS2) detection. Tested with WB, IHC-P in Human; Mouse; Rat.

**Reconstitution**

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

**Anti-COX2/Cyclooxygenase 2 Antibody - Additional Information**

**Gene ID** 5743

**Other Names**

Prostaglandin G/H synthase 2, 1.14.99.1, Cyclooxygenase-2, COX-2, PHS II, Prostaglandin H2 synthase 2, PGH synthase 2, PGHS-2, Prostaglandin-endoperoxide synthase 2, PTGS2, COX2

**Calculated MW**

68996 MW KDa

**Application Details**

Immunohistochemistry (Paraffin-embedded Section), 0.5-1 µg/ml, Human, By Heat  
Western blot, 0.1-0.5 µg/ml, Human, Rat, Mouse

**Subcellular Localization**

Microsome membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein.

**Protein Name**

Prostaglandin G/H synthase 2

**Contents**

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na<sub>2</sub>HPO<sub>4</sub>, 0.05mg Thimerosal, 0.05mg NaN<sub>3</sub>.

**Immunogen**

A synthetic peptide corresponding to a sequence at the N-terminus of human COX2(26-41aa CQNRGVCMSVGFQYK), different from the related rat sequence by two amino acids.

**Purification**

Immunogen affinity purified.

### Cross Reactivity

No cross reactivity with other proteins

### Storage

**At -20°C for one year. After r° Constitution, at 4°C for one month. It° Can also be aliquotted and stored frozen at -20°C for a longer time. Avoid repeated freezing and thawing.**

### Sequence Similarities

Belongs to the prostaglandin G/H synthase family.

## Anti-COX2/Cyclooxygenase 2 Antibody - Protein Information

Name PTGS2 ([HGNC:9605](#))

### Function

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: [11939906](http://www.uniprot.org/citations/11939906), PubMed: [16373578](http://www.uniprot.org/citations/16373578), PubMed: [19540099](http://www.uniprot.org/citations/19540099), PubMed: [22942274](http://www.uniprot.org/citations/22942274), PubMed: [26859324](http://www.uniprot.org/citations/26859324), PubMed: [27226593](http://www.uniprot.org/citations/27226593), PubMed: [7592599](http://www.uniprot.org/citations/7592599), PubMed: [7947975](http://www.uniprot.org/citations/7947975), PubMed: [9261177](http://www.uniprot.org/citations/9261177)). 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: [16373578](http://www.uniprot.org/citations/16373578), PubMed: [22942274](http://www.uniprot.org/citations/22942274), PubMed: [26859324](http://www.uniprot.org/citations/26859324), PubMed: [27226593](http://www.uniprot.org/citations/27226593), PubMed: [7592599](http://www.uniprot.org/citations/7592599), PubMed: [7947975](http://www.uniprot.org/citations/7947975), PubMed: [9261177](http://www.uniprot.org/citations/9261177)). 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: [16373578](http://www.uniprot.org/citations/16373578), PubMed: [22942274](http://www.uniprot.org/citations/22942274), PubMed: [26859324](http://www.uniprot.org/citations/26859324), PubMed: [27226593](http://www.uniprot.org/citations/27226593), PubMed: [7592599](http://www.uniprot.org/citations/7592599), PubMed: [7947975](http://www.uniprot.org/citations/7947975), PubMed: [9261177](http://www.uniprot.org/citations/9261177)). 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 (PubMed: [11939906](http://www.uniprot.org/citations/11939906), PubMed: [19540099](http://www.uniprot.org/citations/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: <a href="http://www.uniprot.org/citations/27642067" target="\_blank">27642067</a>). Metabolizes 2-arachidonoyl glycerol yielding the glyceryl ester of PGH<sub>2</sub>, a process that can contribute to pain response (PubMed: <a href="http://www.uniprot.org/citations/22942274" target="\_blank">22942274</a>). 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: <a href="http://www.uniprot.org/citations/11034610" target="\_blank">11034610</a>, PubMed: <a href="http://www.uniprot.org/citations/11192938" target="\_blank">11192938</a>, PubMed: <a href="http://www.uniprot.org/citations/9048568" target="\_blank">9048568</a>, PubMed: <a href="http://www.uniprot.org/citations/9261177" target="\_blank">9261177</a>). Plays a role in the generation of resolution phase interaction products (resolvins) during both sterile and infectious inflammation (PubMed: <a href="http://www.uniprot.org/citations/12391014" target="\_blank">12391014</a>). Metabolizes docosahexaenoate (DHA, C22:6(n-3)) to 17R-HDHA, a precursor of the D-series resolvins (RvDs) (PubMed: <a href="http://www.uniprot.org/citations/12391014" target="\_blank">12391014</a>). 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 (PubMed: <a href="http://www.uniprot.org/citations/21206090" target="\_blank">21206090</a>). 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 (PubMed: <a href="http://www.uniprot.org/citations/26236990" target="\_blank">26236990</a>). In activated leukocytes, contributes to oxygenation of hydroxyeicosatetraenoates (HETE) to diHETES (5,15-diHETE and 5,11-diHETE) (PubMed: <a href="http://www.uniprot.org/citations/22068350" target="\_blank">22068350</a>, PubMed: <a href="http://www.uniprot.org/citations/26282205" target="\_blank">26282205</a>). 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 (By similarity).

### Cellular Location

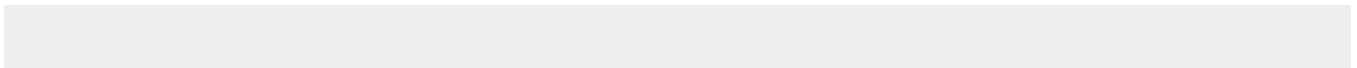
Microsome membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Nucleus inner membrane; Peripheral membrane protein. Nucleus outer membrane; Peripheral membrane protein. Note=Detected on the luminal side of the endoplasmic reticulum and nuclear envelope

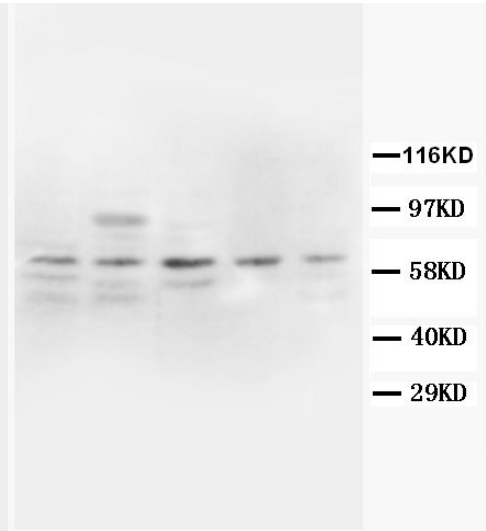
### Anti-COX2/Cyclooxygenase 2 Antibody - Protocols

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

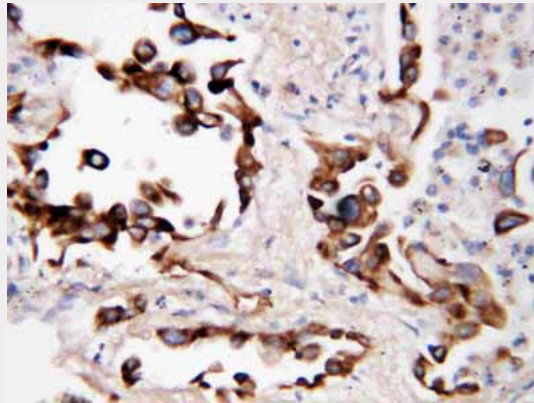
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

### Anti-COX2/Cyclooxygenase 2 Antibody - Images





Anti-COX2/Cyclooxygenase 2 antibody, ABO10592, Western blotting  
Lane 1: MCF-7 Cell Lysate  
Lane 2: HELA Cell Lysate  
Lane 3: MM453 Cell Lysate  
Lane 4: JURKAT Cell Lysate  
Lane 5: COLO320 Cell Lysate



Anti-COX2/Cyclooxygenase 2 antibody, ABO10592, IHC(P)  
IHC(P): Human Mammary Cancer Tissue

### **Anti-COX2/Cyclooxygenase 2 Antibody - Background**

Cyclooxygenase(Cox) is the key enzyme in conversion of arachidonic acid to PGs, and two isoforms, Cox-1 and Cox-2, have been identified. Cox-2 gene encodes an inducible prostaglandin synthase enzyme that is overexpressed in adenocarcinomas and other tumors. Deletion of the murine Cox-2 gene in Min mice reduced the incidence of intestinal tumors, suggesting that it is required for tumorigenesis. This gene is localized to sites associated with retinal blood vessels, and plays an important role in blood vessel formation in the retina. And the glucocorticoid receptor suppression of COX-2 is also crucial for curtailing lethal immune activation, and suggest new therapeutic approaches for regulation of T-cell-mediated inflammatory diseases.