

**Anti-COX-2 (RABBIT) Antibody**  
**Cox-2 Antibody**  
**Catalog # ASR3684**

**Specification**

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**Anti-COX-2 (RABBIT) Antibody - Product Information**

Host	Rabbit
Conjugate	Unconjugated
Target Species	Human
Reactivity	Rat, Human, Mouse
Clonality	Polyclonal
Application	WB, IHC, E, I, LCI
Application Note	Cox-2 (Cyclooxygenase-2) is an inducible enzyme that is normally absent from cells, however, in response to growth factors, tumor promoters and some cytokines, it undergoes a rapid and transient expression. This antiserum against Human Cox-2 and has been tested for use in immunoblotting. The antibody recognizes Cox-2 at 70kDa in Sf9 cell lines transfected with Cox-2 as well as in WISH cells induced with IL-1b. Reactivity in other immunoassays is unknown.
Physical State	Liquid (sterile filtered)
Immunogen	This whole rabbit serum was prepared by repeated immunizations with a fusion protein corresponding to the carboxy-terminus of human Cox-2.
Preservative	0.01% (w/v) Sodium Azide

**Anti-COX-2 (RABBIT) Antibody - Additional Information**

**Gene ID** 5743

**Other Names**  
5743

**Purity**

This antiserum is directed against human Cox-2. Two different isoforms of the enzyme are known, Cox-1 and Cox-2. A BLAST analysis was used to suggest cross-reactivity with Cox-2 in human, mouse and rat based on a homology with the immunizing sequence and should not cross react with Cox-1. Reactivity against homologues from other sources is not known. Reactivity of this antibody with Cox-2 from other species is unknown.

**Storage Condition**

Store vial at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.

## Precautions Note

This product is for research use only and is not intended for therapeutic or diagnostic applications.

## Anti-COX-2 (RABBIT) 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: [27642067](http://www.uniprot.org/citations/27642067)). Metabolizes 2-arachidonoyl glycerol yielding the glyceryl ester of PGH2, a process that can contribute to pain response (PubMed: [22942274](http://www.uniprot.org/citations/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](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

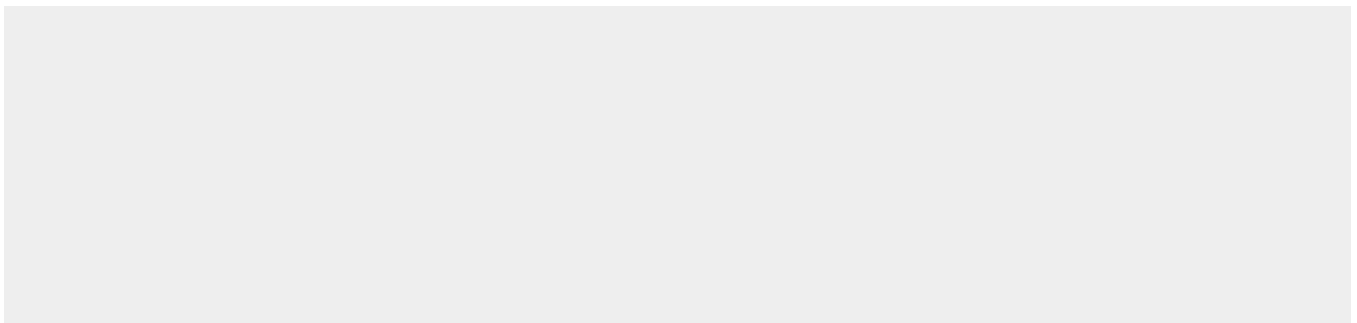
Microsome membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Nucleus inner membrane; Peripheral membrane protein. Nucleus outer membrane; Peripheral membrane protein. Note=Detected on the luminal side of the endoplasmic reticulum and nuclear envelope

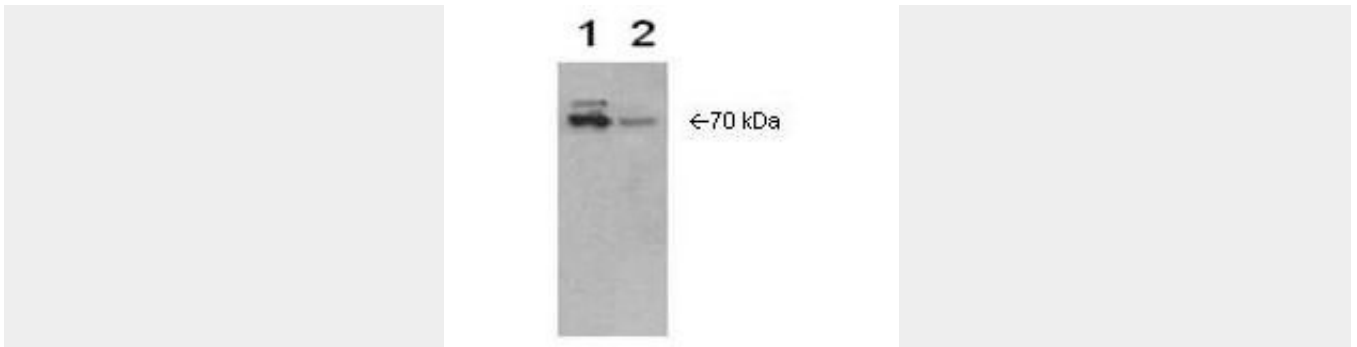
#### Anti-COX-2 (RABBIT) Antibody - Protocols

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-COX-2 (RABBIT) Antibody - Images





Rockland's anti-Cox2 is shown to detect Cox-2 present in Cox-2 transfected Sf9 cell extract (lane 1) and IL-1 $\beta$  induced WISH cell extract (lane 2). Detection occurs using a 1:10,000 dilution of antibody followed by 1:10,000 dilution of HRP Goat-a-Rabbit with visualization via ECL. Film exposure approximately 1'. Other detection systems will yield similar results.

#### **Anti-COX-2 (RABBIT) Antibody - Background**

COX-2, also known as prostaglandin H synthase, was identified less than a decade ago. Its discovery was followed by a period of discovery and drug development to create a "super aspirin" and led to insights into arthritis, Alzheimer's disease, colorectal cancer and regulation of brain and kidney function in search of better treatments for degenerative and inflammatory diseases. Cox-2 is involved in the response of cells to growth factors, tumor promoters, and cytokines that induce its expression. Given its role in synthesizing prostaglandins, Cox-2 is therefore of interest in studying immune response regulation.