

**Cox-2 Polyclonal Antibody**  
Catalog # AP69256**Specification****Cox-2 Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P35354</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal

**Cox-2 Polyclonal Antibody - Additional Information**

Gene ID 5743

**Other Names**

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

**Dilution**

WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. Immunofluorescence: 1/200 - 1/1000. ELISA: 1/20000. Not yet tested in other applications.

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**Cox-2 Polyclonal 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:<a href="http://www.uniprot.org/citations/11939906" target="\_blank">11939906</a>, PubMed:<a href="http://www.uniprot.org/citations/16373578" target="\_blank">16373578</a>, PubMed:<a href="http://www.uniprot.org/citations/19540099" target="\_blank">19540099</a>, PubMed:<a href="http://www.uniprot.org/citations/22942274" target="\_blank">22942274</a>, PubMed:<a href="http://www.uniprot.org/citations/26859324" target="\_blank">26859324</a>, PubMed:<a href="http://www.uniprot.org/citations/27226593" target="\_blank">27226593</a>, PubMed:<a href="http://www.uniprot.org/citations/7592599" target="\_blank">7592599</a>, PubMed:<a href="http://www.uniprot.org/citations/7947975" target="\_blank">7947975</a>, PubMed:<a href="http://www.uniprot.org/citations/9261177" target="\_blank">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="http://www.uniprot.org/citations/16373578" target="\_blank">16373578</a>, PubMed:<a href="http://www.uniprot.org/citations/22942274" target="\_blank">22942274</a>, PubMed:<a href="http://www.uniprot.org/citations/26859324" target="\_blank">26859324</a>, PubMed:<a href="http://www.uniprot.org/citations/27226593" target="\_blank">27226593</a>, PubMed:<a href="http://www.uniprot.org/citations/7592599" target="\_blank">7592599</a>, PubMed:<a href="http://www.uniprot.org/citations/7947975" target="\_blank">7947975</a>, PubMed:<a href="http://www.uniprot.org/citations/9261177" target="\_blank">9261177</a>). This complex transformation is initiated by abstraction of hydrogen at carbon 13 (with S- stereochemistry), followed by insertion of molecular O<sub>2</sub> to form the endoperoxide bridge between carbon 9 and 11 that defines prostaglandins. The insertion of a second molecule of O<sub>2</sub> (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:<a href="http://www.uniprot.org/citations/16373578" target="\_blank">16373578</a>, PubMed:<a href="http://www.uniprot.org/citations/22942274" target="\_blank">22942274</a>, PubMed:<a href="http://www.uniprot.org/citations/26859324" target="\_blank">26859324</a>, PubMed:<a href="http://www.uniprot.org/citations/27226593" target="\_blank">27226593</a>, PubMed:<a href="http://www.uniprot.org/citations/7592599" target="\_blank">7592599</a>, PubMed:<a href="http://www.uniprot.org/citations/7947975" target="\_blank">7947975</a>, PubMed:<a href="http://www.uniprot.org/citations/9261177" target="\_blank">9261177</a>). 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:<a href="http://www.uniprot.org/citations/11939906" target="\_blank">11939906</a>, PubMed:<a href="http://www.uniprot.org/citations/19540099" target="\_blank">19540099</a>). 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, C<sub>22</sub>: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, C<sub>20</sub>:5(n-3)) primarily to 18S-HEPE that is further metabolized by ALOX<sub>5</sub> 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, 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:<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, 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 A4 that regulates phagocytic microglia (By similarity).

#### Cellular Location

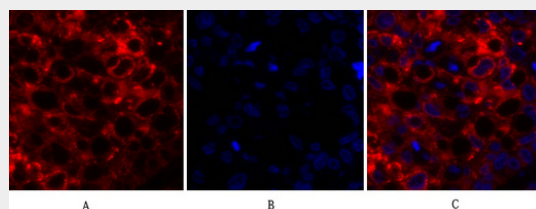
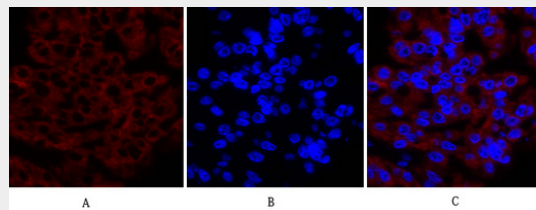
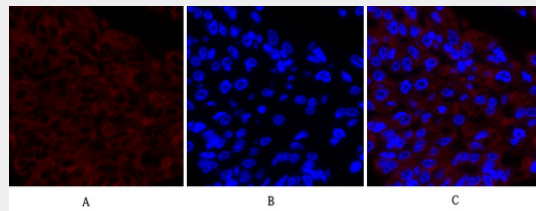
Microsome membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Nucleus inner membrane; Peripheral membrane protein. Nucleus outer membrane; Peripheral membrane protein. Note=Detected on the luminal side of the endoplasmic reticulum and nuclear envelope

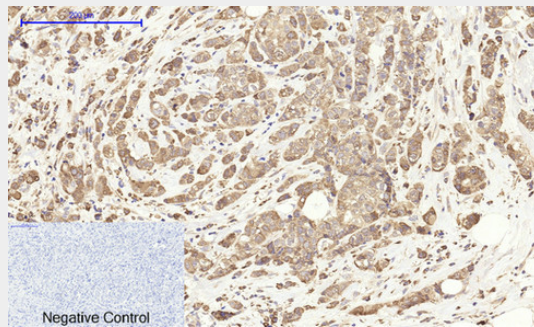
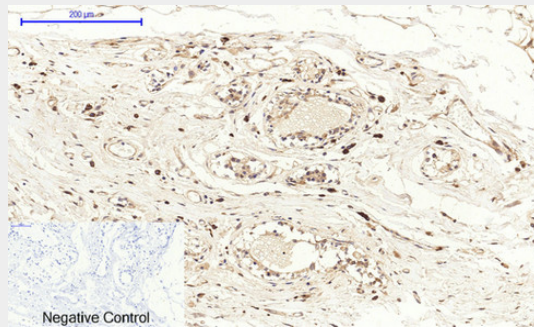
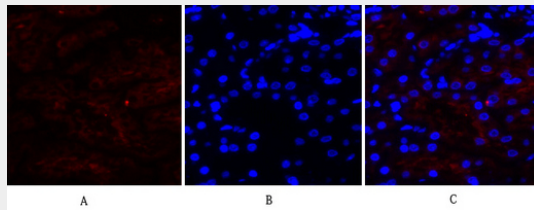
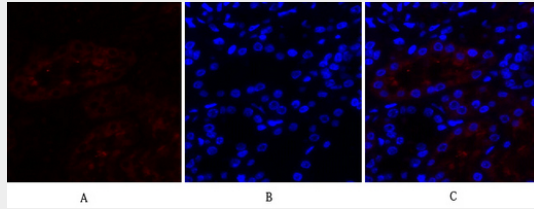
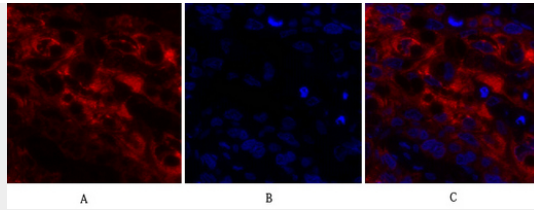
#### Cox-2 Polyclonal Antibody - Protocols

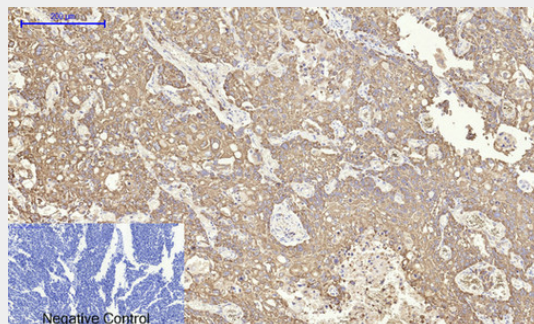
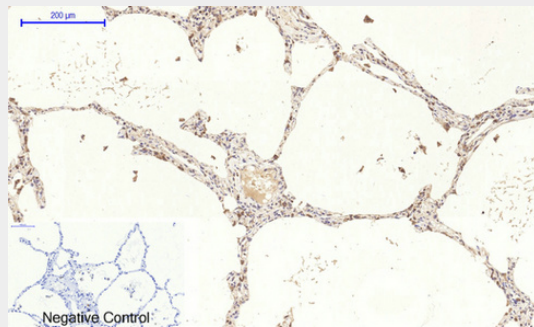
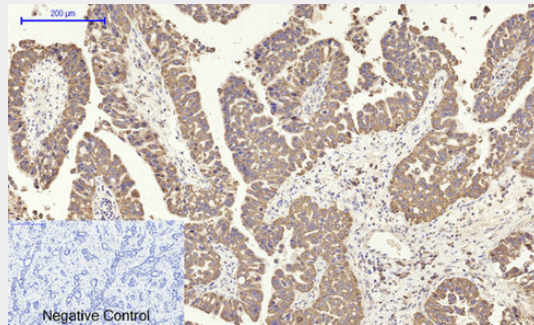
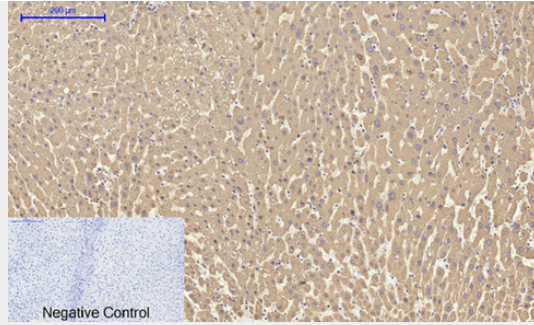
Provided below are standard protocols that you may find useful for product applications.

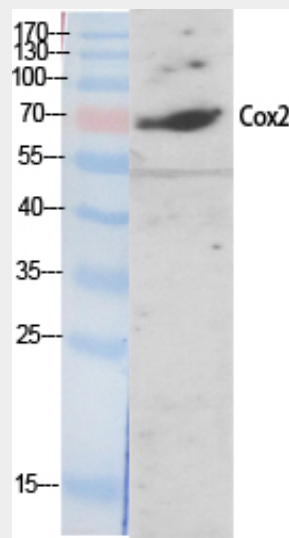
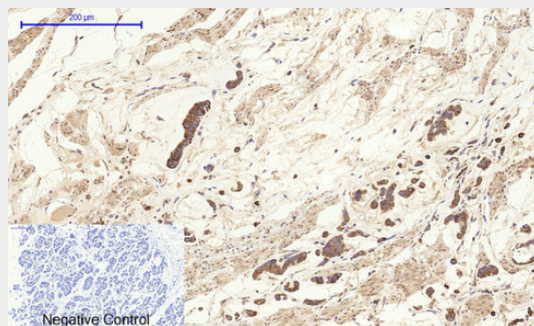
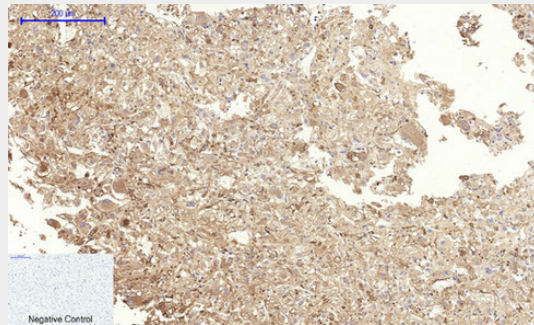
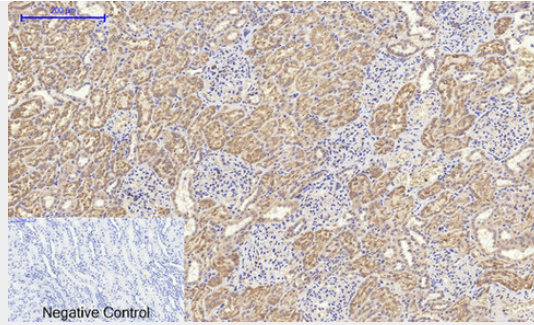
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

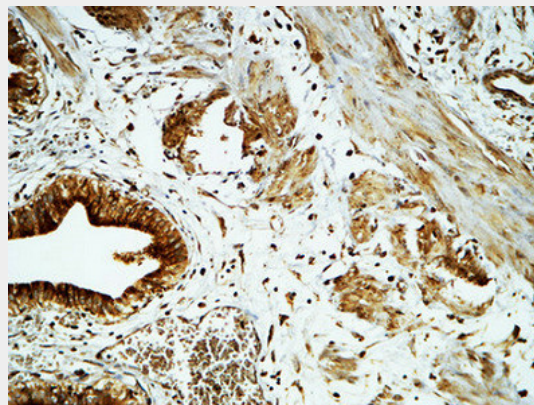
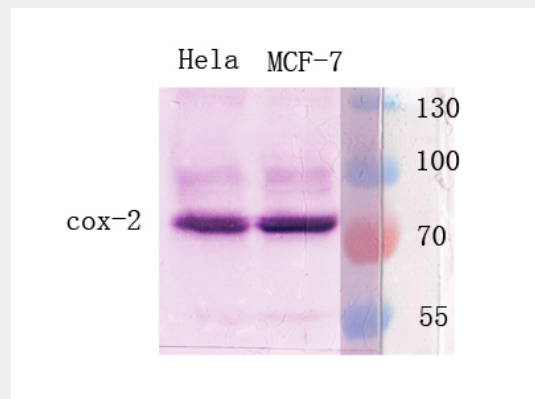
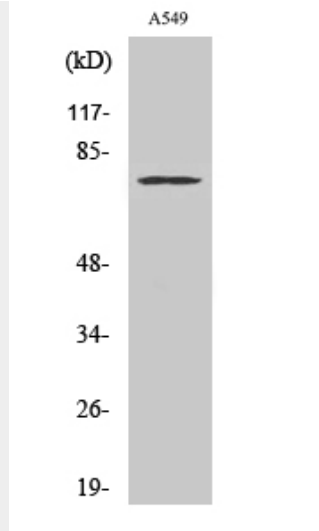
#### Cox-2 Polyclonal Antibody - Images

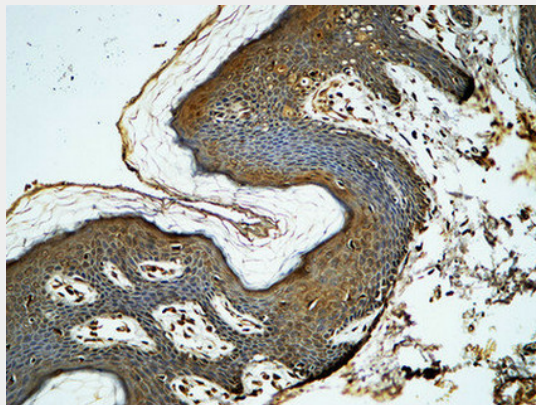
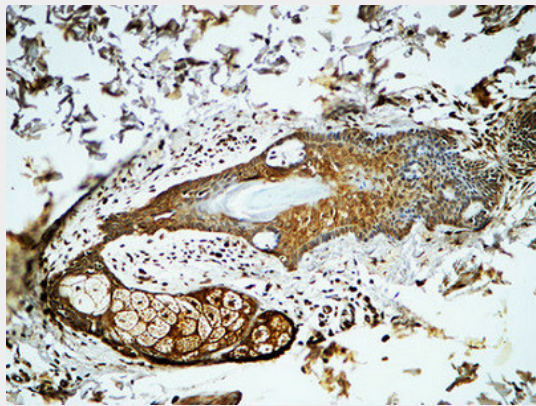
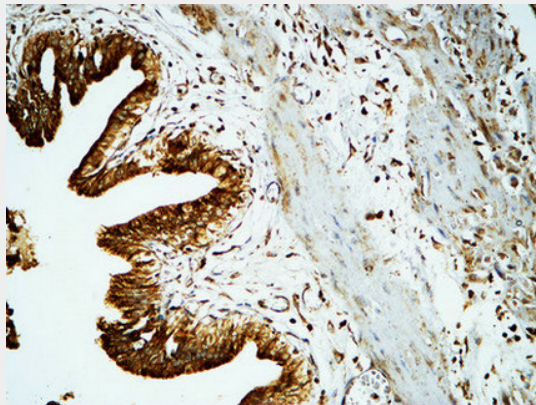
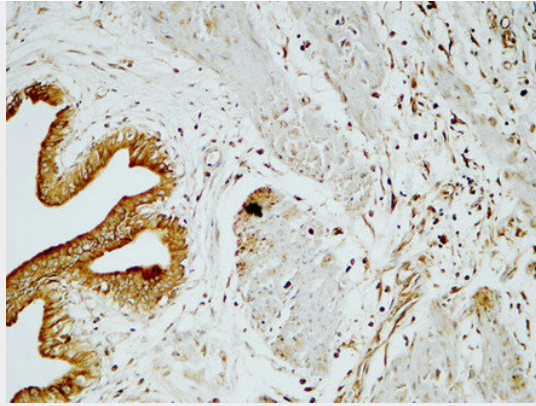














## **Cox-2 Polyclonal Antibody - Background**

Converts arachidonate to prostaglandin H<sub>2</sub> (PGH<sub>2</sub>), a committed step in prostanoid synthesis (PubMed:26859324, PubMed:27226593). 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 E<sub>2</sub> (PGE<sub>2</sub>), which plays important roles in modulating motility, proliferation and resistance to apoptosis.