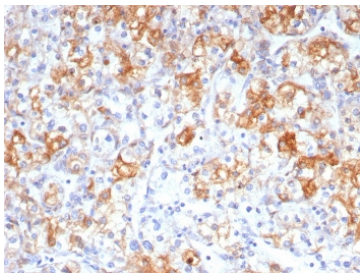
COX2 Antibody / Cyclooxygenase 2 / PTGS2 [clone rCOX2/6996] (V4766)

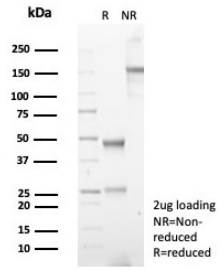
Catalog No.	Formulation	Size
V4766-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4766-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4766SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	rCOX2/6996
Purity	Protein A/G affinity
UniProt	P35354
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE): 1-2ug/ml for 30 min at RT
Limitations	This COX2 antibody is available for research use only.



Immunohistochemistry analysis of COX2 / Cyclooxygenase 2 antibody (clone rCOX2/6996). FFPE human renal cell carcinoma tissue demonstrates cytoplasmic and membranous HRP-DAB brown staining in tumor epithelial cells, consistent with elevated COX2 expression in malignant renal epithelium. Surrounding stromal elements show minimal to weak staining. Antigen retrieval was performed by boiling tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min followed by cooling prior to staining.



SDS-PAGE analysis of purified, BSA-free COX2 antibody (clone rCOX2/6996) as confirmation of integrity and purity.

Description

COX2 antibody, also known as Cyclooxygenase 2 antibody, recognizes Prostaglandin-endoperoxide synthase 2, an inducible enzyme encoded by the PTGS2 gene. Cyclooxygenase 2, frequently referred to as COX-2 or prostaglandin G H synthase 2, is a membrane-associated enzyme localized primarily to the endoplasmic reticulum and nuclear envelope, where it catalyzes the conversion of arachidonic acid into prostaglandin H2, the precursor of multiple bioactive prostanoids. These lipid mediators regulate inflammation, angiogenesis, vascular permeability, and cell proliferation.

Unlike the constitutively expressed PTGS1 isoform, PTGS2 is rapidly induced by pro-inflammatory cytokines, growth factors, tumor promoters, and oncogenic signaling. Upregulation of Cyclooxygenase 2 occurs in response to pathways such as MAPK, NF-kappaB, and PI3K-AKT, linking extracellular inflammatory cues to transcriptional activation of prostaglandin synthesis. Elevated COX2 expression has been widely reported in inflammatory lesions and numerous malignancies, including colorectal, breast, lung, and prostate cancers, where it contributes to enhanced prostaglandin E2 production, tumor cell survival, immune modulation, and angiogenesis.

The PTGS2 gene is located on chromosome 1q31.1 and encodes a homodimeric enzyme belonging to the cyclooxygenase family. Structural domains within Cyclooxygenase 2 enable both cyclooxygenase and peroxidase catalytic activities, which together drive the biosynthesis of downstream prostanoids. Expression is typically low in most resting tissues but becomes prominent in activated macrophages, endothelial cells, and epithelial cells under inflammatory or neoplastic conditions. In histologic sections, cytoplasmic staining is commonly observed in tumor epithelial cells and associated stromal elements, consistent with inducible expression patterns.

A recombinant rabbit monoclonal COX2 antibody offers consistent performance and high specificity for detecting PTGS2 in research applications. This reagent supports investigation of inflammatory signaling, tumor microenvironment biology, and pharmacologic modulation of the COX-2 pathway in experimental systems and clinical research specimens.

Application Notes

Optimal dilution of the COX2 antibody should be determined by the researcher.

Immunogen

A recombinant human COX2 protein fragment (within amino acids 504-604) was used as the immunogen for the COX2 antibody.

Storage

Aliquot the COX2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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