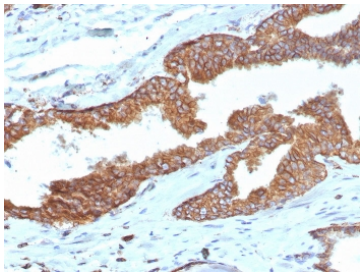
Cyclooxygenase 2 Antibody / COX2 / PTGS2 [clone COX2/7803R] (V4767)

Catalog No.	Formulation	Size
V4767-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4767-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4767SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

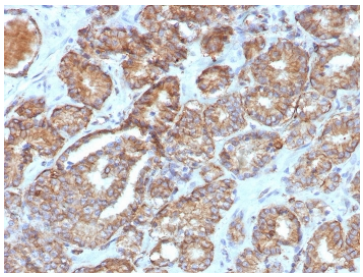
Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	COX2/7803R
Purity	Protein A/G affinity
UniProt	P35354
Localization	Cytoplasm, Cell surface
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml for 30 min at RT
Limitations	This Cyclooxygenase 2 antibody is available for research use only.



Immunohistochemistry analysis of Cyclooxygenase 2 / COX2 antibody (clone COX2/7803R) in human prostate tissue. FFPE human prostate shows strong cytoplasmic and membranous staining in glandular epithelial cells, consistent with COX2 expression in prostatic epithelium, while surrounding stromal cells demonstrate minimal background signal. Antigen retrieval was performed by boiling tissue sections in pH 9, 10mM Tris with 1mM EDTA for 20 minutes followed by cooling prior to staining.



IHC staining of FFPE human prostate tissue with Cyclooxygenase 2 antibody (clone COX2/7803R). HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.

Description

Cyclooxygenase 2 antibody recognizes Prostaglandin-endoperoxide synthase 2, a rate-limiting enzyme in prostaglandin biosynthesis commonly referred to as COX-2 and encoded by the PTGS2 gene. This inducible isoform of cyclooxygenase is a key mediator of inflammatory signaling and is rapidly upregulated in response to cytokines, growth factors, and tumor promoters. Cyclooxygenase 2 antibody is widely used to study inflammation, tumor progression, and angiogenesis because COX2 plays a central role in converting arachidonic acid into prostaglandin H2, the precursor of multiple bioactive prostanoids.

Unlike the constitutively expressed COX-1 isoform, COX2 expression is normally low in most tissues but becomes strongly induced during inflammatory responses. Elevated PTGS2 expression has been documented in macrophages, endothelial cells, fibroblasts, and epithelial cells following stimulation by interleukin-1, tumor necrosis factor, and lipopolysaccharide. In cancer biology, increased COX-2 levels are frequently observed in colorectal carcinoma, breast carcinoma, lung cancer, pancreatic adenocarcinoma, and other malignancies, where it contributes to tumor cell proliferation, resistance to apoptosis, enhanced invasiveness, and neovascularization.

Cyclooxygenase 2 antibody is particularly valuable for investigating the molecular mechanisms linking chronic inflammation and cancer. Prostaglandins produced downstream of COX2 can modulate immune cell recruitment, vascular permeability, and stromal remodeling, thereby shaping the tumor microenvironment. Overexpression of PTGS2 has also been associated with poor prognosis in several tumor types, making it a relevant biomarker in translational research settings. In addition, selective COX-2 inhibitors such as celecoxib have been explored for chemopreventive and therapeutic applications, further underscoring the importance of accurately detecting COX2 protein levels.

Structurally, COX2 is a membrane-associated homodimer localized primarily to the endoplasmic reticulum and nuclear envelope. Its catalytic activity involves both cyclooxygenase and peroxidase functions within the same polypeptide chain. Post-translational modifications and regulatory elements within the PTGS2 promoter contribute to tight transcriptional control under physiological and pathological conditions.

This recombinant monoclonal antibody clone COX2/7803R is designed to target Cyclooxygenase 2 for research applications including immunohistochemistry and western blot analysis. Cyclooxygenase 2 antibody enables detection of COX2 expression in inflammatory lesions, tumor tissues, and experimental model systems, supporting studies of prostaglandin signaling pathways and disease-associated inflammatory processes.

Application Notes

Optimal dilution of the Cyclooxygenase 2 antibody should be determined by the researcher.

Immunogen

A recombinant partial protein sequence (within amino acids 400-604) from the human protein was used as the immunogen for the Cyclooxygenase 2 antibody.

Storage

Aliquot the Cyclooxygenase 2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.