abcam

ab695

Anti-COX1 / Cyclooxygenase 1 antibody [5F6/F4]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.02% Sodium azide
Form	Liquid
Clonality	Monoclonal
Immunogen	Cell preparation containing HL60 protein. The exact immunogen used to generate this antibody is proprietary information.
Clone number	5F6/F4
Purification technique	Affinity purification Immunogen
Light chain type	kappa
Concentration	1.6 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Mouse
Dilution info	1-2 µg for 10^6 Cells
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Target data

See full target information PTGS1

Function	Dual cyclooxygenase and peroxidase that plays an important role 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. 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. 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:7947975). Involved in the constitutive production of prostanoids in particular in the stomach and platelets. In gastric epithelial cells, it is a key step in the generation of prostaglandins, such as prostaglandin E2 (PGE2), which plays an important role in cytoprotection. In platelets, it is involved in the generation of thromboxane A2 (TXA2), which promotes platelet activation and aggregation, vasoconstriction and proliferation of vascular smooth muscle cells (Probable). 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).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Please note that we have received reports from customers working with this antibody that they obtain two stong bands in Western blot. A single band at around 72kDa is expected. One customer reported that when tested with three different human cell lines two strong bands are obtained, one between 40 - 50kDa and other other between 62 - 83kDa. It is possible that a degraded form of the enzyme is detected or the bands may correspond to different glycosylation states.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Cyclooxygenase 1 (COX-1) also known as COX1 cyclooxygenase-1 COX one and the COX1 protein is an important enzyme in the conversion of arachidonic acid to prostaglandins. It is a heme-containing dimer enzyme with a molecular weight of approximately 70 kDa. COX-1 is widely expressed in most tissues and cell types where it plays a significant role in maintaining homeostatic functions. This protein is constitutively active meaning it is often active under normal physiological conditions.
Biological function summary	COX-1 is involved in producing prostaglandins that regulate a variety of normal physiological processes including gastric mucosal protection renal blood flow and platelet aggregation. Unlike COX-2 COX-1 is not induced by inflammatory stimuli and is not part of an inducible complex. It serves to maintain essential physiological functions in various organs and systems making its activity critical for cellular maintenance.
Pathways	COX-1 is primarily involved in the prostaglandin biosynthesis pathway. It converts arachidonic acid into prostaglandin H2 a precursor for other prostaglandins and thromboxanes. Thromboxane A2 produced from this pathway plays an important role in platelet aggregation and vasoconstriction linking COX-1's functions with hemostatic processes. Another protein involved in this pathway is thromboxane synthase which further processes the products of COX-1 activity.
Associated diseases and disorders	COX-1’s role connects it closely to conditions like peptic ulcers and cardiovascular diseases. Inhibition of COX-1 by nonsteroidal anti-inflammatory drugs (NSAIDs) can lead to gastric mucosal damage contributing to the development of peptic ulcers. Additionally due to its involvement in platelet aggregation COX-1 affects thrombotic diseases. COX-1's interactions with proteins such as COX-2 become relevant in inflammation and pain management where selective inhibition of COX-2 is sought to reduce adverse effects related to COX-1.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

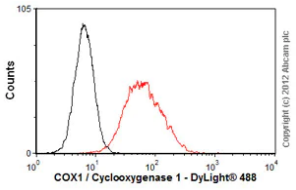
We do not recommend this combination. It is not covered by our product promise.

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1 product image



Flow Cytometry - Anti-COX1 / Cyclooxygenase 1 antibody [5F6/F4] (ab695)

COX1 / Cyclooxygenase 1 Flow Cytometry staining using mouse Anti-COX1 / Cyclooxygenase 1 antibody

Overlay histogram showing NIH/3T3 (Mouse embryo fibroblast cell line) cells stained with ab695 (red line). The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab695, 2 µg/1x10^6 cells) for 30 minutes at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2 µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed.

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