PRODUCT INFORMATION

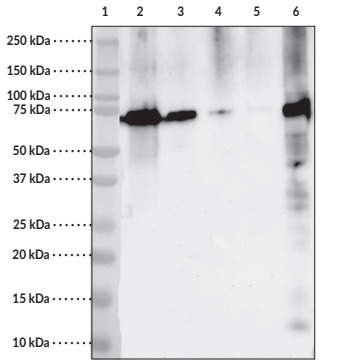
COX-2 Monoclonal Antibody (Clone 12C10)

Item No. 20198

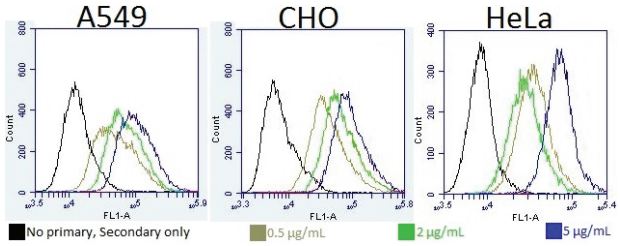
Overview and Properties

Contents:	This vial contains 50 µg of protein G-purified IgG.
Synonyms:	Cyclooxygenase-2, PGHS-2, Prostaglandin H Synthase 2
Immunogen:	Synthetic peptide from the C-terminal region of mouse COX-2
Cross Reactivity:	(-) COX-1 (all species)
Species Reactivity:	(+) Human, mouse, and ovine
Uniprot No.:	P35354
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Clone:	12C10
Host:	Mouse
Isotype:	IgG1
Applications:	ELISA, Flow cytometry (FC), Immunofluorescence (IF), and Western blot (WB); the recommended starting dilution is 1:200 for ELISA, FC, and WB, and 1:100 for IF. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

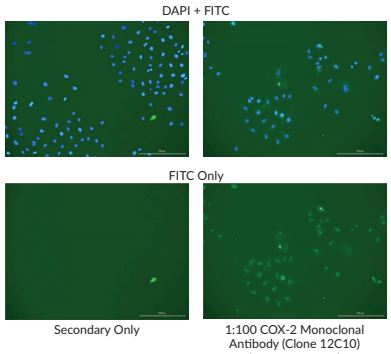
Images



Lane 1: Standard
Lane 2: COX-2 (ovine) (100 ng)
Lane 3: COX-2 (ovine) (10 ng)
Lane 4: COX-2 (ovine) (1 ng)
Lane 5: COX-1 (ovine) (negative control) (500 ng)
Lane 6: RAW 264.7 Microsomes (1 µg)



Flow Cytometry. Concentrations of primary COX-2 Monoclonal Antibody (Clone 12C10) Item No. 20198 color coded above (0.0, 0.5, 2, and 5 µg/ml) as detected using A549, CHO, and HeLa cell lines. Fluorometrically detected using FITC conjugated secondary.



Immunofluorescence analysis of paraformaldehyde-fixed, A549 cells. After incubation with COX-2 Monoclonal Antibody (Clone 12C10) (Item No. 20198) at a dilution of 1:100 (or negative control), cells were incubated with Goat Anti-Mouse (IgG+IgM) FITC (Item No. 10006617), followed by DAPI nuclear stain. Images show FITC alone or both fluorescence channels to highlight nuclear staining (where applicable).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

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Description

Cyclooxygenase 2 (COX-2) is a bifunctional enzyme that exhibits both COX and peroxidase activities and catalyzes the first step in the biosynthesis of prostaglandins, thromboxanes, and prostacyclins.[1,2] The COX component converts arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) to the hydroperoxy endoperoxide prostaglandin G_2 (PGG_2; Item No. 17010), and the peroxidase component reduces the endoperoxide to the corresponding alcohol PGH_2 (Item No. 17020). *COX2* expression is induced by a variety of stimuli, including phorbol esters, LPS, and cytokines and is responsible for the biosynthesis of PGs under acute inflammatory conditions.[3,4] Thus, COX-2 has been the focus of attention for nonsteroidal anti-inflammatory drug (NSAID) development. Cayman's COX-2 Monoclonal Antibody (Clone 12C10) can be used for ELISA, flow cytometry (FC), immunofluorescence (IF), and Western blot (WB) applications. The antibody recognizes a unique C-terminal region of COX-2 that is not present in COX-1, specifically detecting COX-2 at 72 kDa from human, mouse, and ovine samples.

References

1. Nugteren, D.H. and Hazelhof, E. Isolation and properties of intermediates in prostaglandin biosynthesis. *Biochim. Biophys. Acta* **326(3)**, 448-461 (1973).
2. Hamberg, M. and Samuelsson, B. Detection and isolation of an endoperoxide intermediate in prostaglandin biosynthesis. *Proc. Natl. Acad. Sci. USA* **70(3)**, 899-903 (1973).
3. Kang, Y.-J., Mbonye, U.R., DeLong, C.J., *et al.* Regulation of intracellular cyclooxygenase levels by gene transcription and protein degradation. *Prog. Lipid Res.* **46(2)**, 108-25 (2007).
4. Blobaum, A.L. and Marnett, L.J. Structural and functional basis of cyclooxygenase inhibition. *J. Med. Chem.* **50(7)**, 1425-1441 (2007).

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