SANTA CRUZ BIOTECHNOLOGY, INC.

# Cox-2 (D-12): sc-166475

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Prostaglandins are a diverse group of autocrine and paracrine hormones that mediate many cellular and physiologic processes. Prostaglandin H2 (PGH2) is an intermediate molecule in formation of the prostaglandins. Cyclooxygenase-1 (Cox-1) and cyclooxygenase-2 (Cox-2) are prostaglandin synthases that catalyze the formation of PGH2 from arachidonic acid (AA). Cox-1 and Cox-2 are isozymes of prostaglandin-endoperoxidase synthase (PTGS). Cox-1 is constitutively expressed in most tissues and is thought to serve in general "housekeeping" functions. Cox-2 is efficiently induced in migratory cells responding to pro-inflammatory stimuli and is considered to be an important mediator of inflammation. Both enzymes are targets for the nonsteroidal therapeutic anti-inflammatory drugs, NSAIDs.

## REFERENCES


1. O'Neill, P.O. and Ford-Hutchinson, A.W. 1993. Expression of mRNA for cyclooxygenase-1 and cyclooxygenase-2 in human tissues. FEBS Lett. 330: 156-160.
2. O'Neill, G.P., et al. 1994. Overexpression of human prostaglandin G/H synthase-1 and -2 by recombinant vaccinia virus: inhibition by nonsteroidal anti-inflammatory drugs and biosynthesis of 15-hydroeicosatetraenoic acid. Mol. Pharm. 45: 245-254.


## CHROMOSOMAL LOCATION

Genetic locus: PTGS2 (human) mapping to 1q31.1; Ptgs2 (mouse) mapping to 1 G1.

## SOURCE

Cox-2 (D-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 580-604 at the C-terminus of Cox-2 of mouse origin.

## PRODUCT

Each vial contains 200 µg $IgG_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Cox-2 (D-12) is available conjugated to agarose (sc-166475 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166475 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166475 PE), fluorescein (sc-166475 FITC), Alexa Fluor® 488 (sc-166475 AF488), Alexa Fluor® 546 (sc-166475 AF546), Alexa Fluor® 594 (sc-166475 AF594) or Alexa Fluor® 647 (sc-166475 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166475 AF680) or Alexa Fluor® 790 (sc-166475 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166475 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).



## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

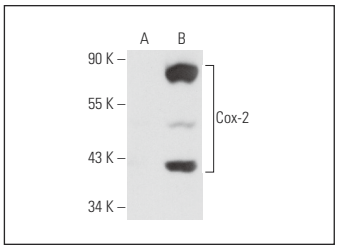
Cox-2 (D-12) is recommended for detection of Cox-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cox-2 siRNA (h): sc-29279, Cox-2 siRNA (m): sc-29278, Cox-2 siRNA (r): sc-270376, Cox-2 shRNA Plasmid (h): sc-29279-SH, Cox-2 shRNA Plasmid (m): sc-29278-SH, Cox-2 shRNA Plasmid (r): sc-270376-SH, Cox-2 shRNA (h) Lentiviral Particles: sc-29279-V, Cox-2 shRNA (m) Lentiviral Particles: sc-29278-V and Cox-2 shRNA (r) Lentiviral Particles: sc-270376-V.

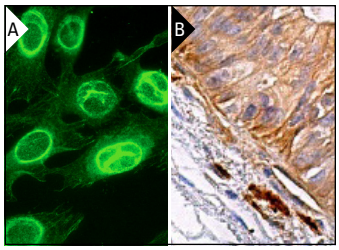
Molecular Weight of Cox-2: 70-72 kDa.

Positive Controls: Cox-2 (h): 293 Lysate: sc-113099, A549 cell lysate: sc-2413 or NIH/3T3 whole cell lysate: sc-2210.

## DATA




Cox-2 (D-12): sc-166475. Western blot analysis of Cox-2 expression in non-transfected: sc-110760 (**A**) and human Cox-2 transfected: sc-113099 (**B**) 293 whole cell lysates.




Cox-2 (D-12): sc-166475. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing membrane and nuclear envelope localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human gall bladder tissue showing cytoplasmic staining of glandular cells (**B**).

## SELECT PRODUCT CITATIONS


1. Liu, X.H., et al. 2012. Leonurine attenuates lipopolysaccharide-induced inflammatory responses in human endothelial cells: involvement of reactive oxygen species and NFκB pathways. Eur. J. Pharmacol. 680: 108-114.
2. Zhou, J., et al. 2022. NMDA receptor-dependent prostaglandin-endoperoxide synthase 2 induction in neurons promotes glial proliferation during brain development and injury. Cell Rep. 38: 110557.
3. Sztolsztener, K., et al. 2023. N-acetylcysteine decreases myocardial content of inflammatory mediators preventing the development of inflammation state and oxidative stress in rats subjected to a high-fat diet. Int. J. Inflam. 2023: 5480199.
4. Liu, Y., et al. 2024. NG2 glia protect against prion neurotoxicity by inhibiting microglia-to-neuron prostaglandin E2 signaling. Nat. Neurosci. 27: 1534-1544.


## RESEARCH USE

For research use only, not for use in diagnostic procedures.