

PRODUCT INFORMATION



COX-1 (human, recombinant)

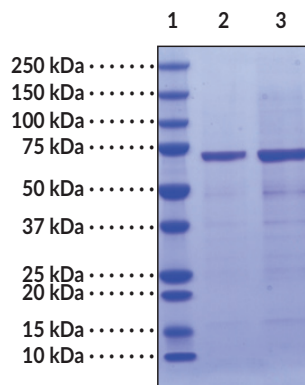
Item No. 17616

Overview and Properties

Synonyms:	Cyclooxygenase 1, PGHS-1, Prostaglandin Endoperoxide Synthase 1, Prostaglandin G/H Synthase 1, Prostaglandin H2 Synthase 1
Source:	Active recombinant human His-tagged COX-1 expressed in insect cells
Amino Acids:	24-599 (full-length)
Uniprot No.:	P23219
Molecular Weight:	~70 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥1 year
Purity:	≥85% estimated by SDS-PAGE
Supplied in:	80 mM Tris, pH 8.0, with 0.01% polysorbate 20, 300 μM DDC, and 10% glycerol
Protein Concentration:	<i>batch specific</i> mg/ml
Activity:	<i>batch specific</i> U/ml
Specific Activity:	<i>batch specific</i> U/mg
Unit Definition:	One unit is defined as the amount of enzyme required to consume 1 nmol of oxygen per minute at 37°C in 100 mM Tris, pH 8.0, containing 100 μM arachidonate, 5 mM EDTA, 2 mM phenol, and 1 μM hematin.

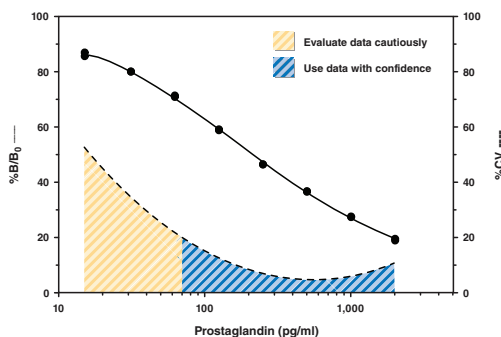
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: COX-1 (2 μg)
Lane 3: COX-1 (4 μg)

Representative gel image shown; actual purity may vary between each batch.



Assay Range = 15.6-2,000 pg/ml
Sensitivity (defined as 80% B/B₀) = 29 pg/ml
Mid-point (defined as 50% B/B₀) = 125-250 pg/ml
The sensitivity and mid-point were derived from the standard curve shown above. The standard was diluted with ELISA Buffer.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Cyclooxygenase 1 (COX-1) is a bifunctional enzyme that exhibits both COX and peroxidase activities.^{1,2} It is composed of an N-terminal signal peptide, an EGF-like domain, a membrane binding domain, a catalytic domain, and a C-terminal tail.³ COX-1 is constitutively expressed in the gastrointestinal tract, kidney, spleen, liver, and lung and localizes to the endoplasmic reticulum.^{4,5} The COX component converts arachidonic acid (Item Nos. 90010 | 90010.1 | 10006607) to a hydroperoxyl endoperoxide prostaglandin G₂ (PGG₂; Item No. 17010) and the peroxidase component reduces the endoperoxide to the corresponding alcohol PGH₂ (Item No. 17020), the precursor of PGs, thromboxanes, and prostacyclins.^{1,2} COX-1 is the target of many non-steroidal anti-inflammatory drugs (NSAIDs) and is responsible for the undesirable gastrointestinal and renal side effects, such as ulcer formation and reductions in the glomerular filtration rate, respectively.^{6,7} Cayman's COX-1 (human, recombinant) protein can be used for enzyme activity assays.

Reference

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4. Seibert, K., Zhang, Y., Leahy, K., *et al.* Pharmacological and biochemical demonstration of the role of cyclooxygenase 2 in inflammation and pain. *Proc. Natl. Acad. Sci. USA* **91(25)**, 12013-12017 (1994).
5. Morita, I., Schindler, M., Regier, M.K., *et al.* Different intracellular locations for prostaglandin endoperoxide H synthase-1 and -2. *J. Biol. Chem.* **270(18)**, 10902-10908 (1995).
6. Gierse, J.K., Hauser, S.D., Creely, D.P., *et al.* Expression and selective inhibition of the constitutive and inducible forms of human cyclo-oxygenase. *Biochem. J.* **305(Pt. 2)**, 379-484 (1995).
7. Frölich, J.C. A classification of NSAIDs according to the relative inhibition of cyclooxygenase isoenzymes. *Trends Pharmacol. Sci.* **18(1)**, 30-34 (1997).

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