PRODUCT INFORMATION

COX-2 (ovine, recombinant)

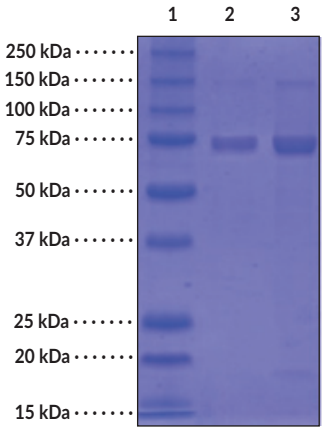
Item No. 18356

Overview and Properties

Synonyms:	Cyclooxygenase 2, Inducible Cyclooxygenase Prostaglandin H Synthase 2
Source:	Active recombinant N-terminal His-tagged ovine COX-2 expressed in insect cells
Amino Acids:	24-599
Uniprot No.:	P79208
Molecular Weight:	~70 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥6 months
Purity:	***batch specific*** (≥80% estimated by SDS-PAGE)
Supplied in:	***batch specific***
Activity:	***batch specific*** U/ml. One unit is defined as the amount of enzyme required to consume 1 nmol of oxygen per minute 37°C in 100 mM Tris, pH 8.0, containing 100 µM arachidonate, 5 mM EDTA, 2 mM phenol, and 1 µM hematin.
Specific Activity:	***batch specific*** nmol/min/mg
Protein Concentration:	***batch specific*** mg/ml
Specific Activity:	>20,000 U/mg

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

Image



Lane 1: MW Markers
Lane 2: COX-2 (2 µg)
Lane 3: COX-2 (5 µg)

SDS-PAGE Analysis of COX-2.

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

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 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 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 (ovine, recombinant) protein can be used for enzyme activity assays.

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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