

# PRODUCT INFORMATION



## COX-2 (human, recombinant)

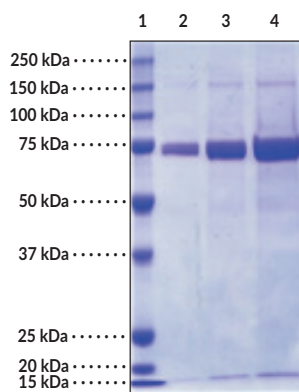
Item No. 60122

### Overview and Properties

**Synonyms:** Cyclooxygenase 2, Prostaglandin H Synthase 2  
**Source:** Active recombinant N-terminal His-tagged COX-2<sup>N580A</sup> mutant purified from insect cells  
**Amino Acids:** 20-604  
**Uniprot No.:** P35354  
**Molecular Weight:** 67.9 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥1 year  
**Purity:** *batch specific* (≥75% estimated by SDS-PAGE)  
**Supplied in:** 80 mM Tris, pH 8.0, with 0.3 mM DDC, 0.01% Tween 20, and 10% glycerol  
**Protein Concentration:** *batch specific* mg/ml  
**Activity:** *batch specific* U/ml  
**Specific Activity:** *batch specific* U/mg  
**Unit Definition:** One unit of enzyme consumes one nanomole of oxygen per minute at 37°C in 0.1 M Tris-HCl buffer, pH 8.0, containing 100 μM arachidonate, 5 mM EDTA, 2 mM phenol, and 1 μM hematin. The cyclooxygenase activity of COX-2 was measured at 37°C by monitoring oxygen consumption using a Gilson Model 5/6 H oxygraph equipped with a Clark oxygen electrode.

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)  
Lane 4: COX-2 (10 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.

Copyright Cayman Chemical Company, 06/24/2020

#### 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

# PRODUCT INFORMATION



## 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.<sup>1,2</sup> The COX component converts arachidonic acid to the hydroperoxy endoperoxide prostaglandin G2 (PGG2; Item No. 17010), and the peroxidase component reduces the endoperoxide to the corresponding alcohol PGH2 (Item No. 17020). COX-2 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.<sup>3</sup> Thus, COX-2 has been the focus of attention for the nonsteroidal anti-inflammatory drug (NSAID) development. Cayman's COX-2 (human, recombinant) contains an N-terminal hexahistidine tag and an alanine substituted for arginine at position 508 (COX-2N580A) that prevents glycosylation at position 580 and decreases enzyme degradation in cells.<sup>4</sup>

## 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. U.S.A.* **70(3)**, 899-903 (1973).
3. Blobaum, A.L. and Marnett, L.J. Structural and functional basis of cyclooxygenase inhibition. *J. Med. Chem.* **50(7)**, 1425-1441 (2007).
4. Sevigny, M.B., Li, C.-F., Alas, M., *et al.* Glycosylation regulates turnover of cyclooxygenase-2. *FEBS Lett.* **580(28-29)**, 6533-6536 (2006).

## 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