# CYCLOOXYGENASE-1
# (PGHS-1; PHS-1; Prostaglandin-endoperoxide synthase-1; COX-1)

Cat. COX14-M, Mouse Monoclonal Anti-Ovine COX-1 IgG # 4, SIZE: 100 µg
Cat. COX14-C, Ram COX-1 protein western blot positive control, SIZE: 100 µl

Prostaglandins are important regulators of immune responses, fever, and pain. Two isoforms of Prostaglandin H synthase are well characterized, namely COX1 (also called PGHS-1; PHS-1; Prostaglandin-endoperoxide synthase-1) and COX2 (also called PGHS-2; Prostaglandin-endoproxide synthase-2 and PHSII). Both forms of COX proteins are membrane associated heme proteins containing Cyclooxygenase and peroxidase activities. These enzymes are targets of NSAID (Non steroidal anti-inflammatory drugs) such as aspirin. Cox-1 (human 599 aa; rat 602 aa) is homodimer of 70KD subunits (1). COX1 is constitutively expressed although significant enhancement of COX1 expression can be induced in some cell types. High expression is observed in gastrointestinal tissues.
COX-1 may play an important role in regulating or promoting cell proliferation in some normal and nepotistic cells. It catalyzes arachidonate + AH(2) + 2 O(2) = PROSTAGLANDIN H2 + A + H(2)O. This enzyme acts both as a dioxygenase and as a peroxidase. It acts as the first step in the formation of Prostaglandins and thromboxanes. Cox-1 contains 1 EGF-like domain.

## Source of Antigen and Antibodies

Purified ovine cox-1 protein was used to produce mouse monoclonal (IgG2b) antibodies. The clone was expanded as ascites and IgG purified by Protein A/G chromatography.
Cox-1 western blot +ve control is prepared from ovine/ram seminal vesicles. It is provided in ready to use solution in SDS-page reduced sample buffer (load 10 µl/lane). Store at -20°C in suitable aliquots. Heat once prior to loading.

## Form & Storage of Antibodies/Peptide Control

Affinity pure IG is supplied as 100 µg/0.5 ml soln in PBS, pH 7.4 and 0.2% gelatin as stabilizer or Lyophilized powder. The antibodies also contain 0.1% sodium azide as preservative. Lyophilized products should be reconstituted in 500 µl water and gently mixed for 15 min at room temp. All peptide/antibody received in solution or reconstituted from lyophilized vials should be stored frozen at -20°C or below in suitable aliquots. It is not recommended to store diluted solutions. Avoid repeated freeze and thaw.

## Recommended Usage

Western Blotting (1:100-1:500 for affinity pure serum using Chemiluminescence technique). COX14-M detected ~70 kDa band in uninduced NIH/3T3 and other cells (2).
ELISA (1:10K-1:30K).
Histochemistry & Immunofluorescence: not tested. We recommend the use of antibody at 2-20 µg/ml.

## Specificity & Cross-reactivity

Cox14-M reacts with Cox-1 from mouse, rat, human, and ovine. Other species not tested.

## References:

1. DeWitt, D. L.. et al (1990) J. Biol. Chem. 265, 5192-5198; Diaz A et al (1992) J. Biol. Chem. 267, 10816
2. Morham SG et al (1995) Cell 83, 473-482; Langerbach R et al (1995) Cell 83, 483-492; Tsuji M et al (1995) Cell 83, 493-501; O'Neil PO et al (1993) FEBS Lett. 330, 156-160