# PTGS2 Antibody / Prostaglandin-Endoperoxide Synthase 2 [clone r4H12] (V5977)

| Catalog No. | Formulation | Size |
|---|---|---|
| V5977-100UG | 0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide | 100 ug |
| V5977-20UG | 0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide | 20 ug |
| V5977SAF-100UG | 1 mg/ml in 1X PBS; BSA free, sodium azide free | 100 ug |

Recombinant MOUSE MONOCLONAL

**Bulk quote request**

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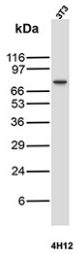
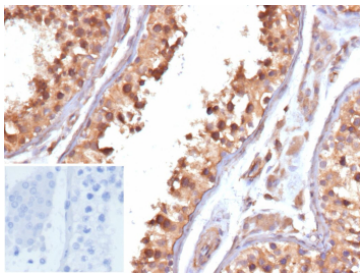
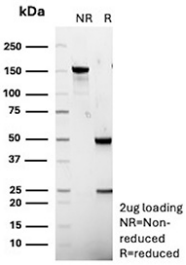
|---|---|
| **Species Reactivity** | Human |
| **Format** | Purified |
| **Host** | Mouse |
| **Clonality** | Recombinant Mouse Monoclonal |
| **Isotype** | Mouse IgG1, kappa |
| **Clone Name** | r4H12 |
| **UniProt** | P35354 |
| **Localization** | Cytoplasm |
| **Applications** | Immunohistochemistry (FFPE): 1-2ug/ml |
| **Limitations** | This PTGS2/Prostaglandin-endoperoxide synthase 2 antibody is available for research use only. |




Western blot analysis of NIH3T3 mouse fibroblast cell lysate using PTGS2 / Prostaglandin-Endoperoxide Synthase 2 antibody (clone r4H12). A distinct band is observed at approximately 72-74 kDa, consistent with the predicted molecular weight of PTGS2. The detected signal aligns with the expected size of the inducible Cyclooxygenase 2 protein.



Immunohistochemistry analysis of PTGS2 / Prostaglandin-Endoperoxide Synthase 2 antibody in human testis. Formalin-fixed, paraffin-embedded human testis tissue was stained with COX-2 Recombinant Mouse Monoclonal Antibody (clone r4H12). Tumor cells show cytoplasmic brown chromogenic staining consistent with Cyclooxygenase 2 expression, while nuclei are counterstained blue. The staining pattern is predominantly cytoplasmic within epithelial cells. Inset: PBS was used in place of the primary antibody as a secondary antibody-only negative control and shows no specific staining. Heat-induced epitope retrieval was performed in 10mM Tris with 1mM EDTA, pH 9.0, for 45 min at 95oC followed by cooling at room temperature for 20 minutes.




SDS-PAGE Analysis of Purified PTGS2/Prostaglandin-endoperoxide synthase 2 antibody (r4H12). Confirmation of Purity and Integrity of Antibody.

## Description

PTGS2 antibody recognizes Prostaglandin-Endoperoxide Synthase 2, the inducible isoform of cyclooxygenase encoded by the human PTGS2 gene. Prostaglandin-Endoperoxide Synthase 2 is a key rate-limiting enzyme in prostaglandin biosynthesis and is commonly referred to in the literature as COX-2. Unlike the constitutively expressed PTGS1 isoform, PTGS2 expression is tightly regulated and rapidly induced by inflammatory cytokines, growth factors, tumor promoters, and cellular stress. The protein localizes predominantly to the endoplasmic reticulum and nuclear envelope, where it converts arachidonic acid into prostaglandin H2, a precursor for multiple bioactive lipid mediators.

Functionally, PTGS2 plays a central role in inflammation, pain signaling, fever response, and tissue remodeling. It participates in pathways downstream of NF-kappaB, MAPK, and other pro-inflammatory signaling cascades. Elevated PTGS2 expression is observed in activated macrophages, endothelial cells, fibroblasts, and epithelial cells exposed to inflammatory stimuli. In normal tissues, expression is typically low or absent, but strong upregulation occurs during acute and chronic inflammatory processes.

PTGS2 has significant relevance in oncology. Overexpression has been documented in colorectal carcinoma, breast cancer, lung cancer, prostate cancer, and renal cell carcinoma, where it contributes to tumor cell proliferation, resistance to apoptosis, angiogenesis, and immune modulation. Increased PTGS2 activity enhances prostaglandin E2 production, which promotes tumor-associated inflammation and supports a protumorigenic microenvironment. These roles have made PTGS2 both a widely studied biomarker and a therapeutic target of nonsteroidal anti-inflammatory drugs and selective COX-2 inhibitors.

The PTGS2 antibody clone r4H12 is a recombinant monoclonal antibody designed to target PTGS2 in research applications. Recombinant production in mammalian expression systems promotes lot-to-lot consistency and defined specificity. This PTGS2 antibody is suitable for detecting Prostaglandin-Endoperoxide Synthase 2 expression in tissue sections and lysates where inducible cyclooxygenase activity is of interest, particularly in studies of inflammation, tumor biology, and vascular remodeling.

## Application Notes

Optimal dilution of the PTGS2/Prostaglandin-endoperoxide synthase 2 antibody should be determined by the researcher.

## Immunogen

Prokaryotic recombinant protein corresponding to amino acids 38 to 163 of the N-terminal domain of the human cyclooxygenase-2 molecule was used as the immunogen for the PTGS2/Prostaglandin-endoperoxide synthase 2 antibody.

## Storage

PTGS2/Prostaglandin-endoperoxide synthase 2 antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.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