

# Polyclonal Anti-CYP1A2 Antibody

Catalog Number: PA1907

## Description

<b>Gene Name</b>	cytochrome P450, family 1, subfamily A, polypeptide 2
<b>Recommended Protein Name</b>	Cytochrome P450 1A2
<b>Lot No.</b>	0191512c01j020738
<b>Size</b>	100µg/vial
<b>Form</b>	lyophilized
<b>Ig type</b>	Rabbit IgG
<b>Specificity</b>	No cross reactivity with other proteins.
<b>Purification</b>	Immunogen affinity purified.
<b>Species</b>	<b>Reacts with:</b> human, mouse, rat
<b>Immunogen</b>	A synthetic peptide corresponding to a sequence in the middle region of human CYP1A2(265-282aa QKTVQEHYQDFDKNSVRD), different from the related rat and mouse sequences by three amino acids.
<b>Contents</b>	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na <sub>2</sub> HPO <sub>4</sub> , 0.05mg Thimerosal, 0.05mg NaN <sub>3</sub> .

## Application

	Concentration	Tested Species	Predicted Species	Antigen Retrieval
Western blot	0.1-0.5µg/ml	Hu, Ms, Rat	-	-
Immunohistochemistry (Paraffin-embedded Section)	0.5-1µg/ml	Rat	Hu, Ms	By Heat

**WB: The detection limit for CYP1A2 is approximately 1ng/lane under reducing conditions.**

**Tested Species:** In-house tested species with positive results.

**Predicted Species:** Species predicted to be fit for the product based on sequence similarities.

**By Heat: Boiling the paraffin sections in 10mM citrate buffer, pH6.0, for 20mins is required for the staining of formalin/paraffin sections.**

*Other applications have not been tested.*

*Optimal dilutions should be determined by end users.*

## Preparation and storage

**Reconstitution:** 0.2ml of distilled water will yield a concentration of 500µg/ml.

**Storage:** At -20°C for one year. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for a longer time.

Avoid repeated freezing and thawing.

## Relevant detection systems

Boster provides a series of assays reacted with primary antibodies. Antibody can be supported by chemiluminescence kit EK1002 in WB, supported by SA1022 in IHC(P).

## Background

CYP1A2(Cytochrome P450, Subfamily I, Polypeptide 2) is a member of the cytochrome P450 mixed-function oxidase system and is involved in the metabolism of xenobiotics in the body. CYP1A2 is a member of the cytochrome P450 superfamily of enzymes. In humans, the CYP1A2 enzyme is encoded by the CYP1A2 gene. CYP1A2 localizes to the endoplasmic reticulum and its expression is induced by some polycyclic aromatic hydrocarbons (PAHs), some of which are found in cigarette smoke. The CYP1A2 gene encodes a P450 enzyme involved in O-deethylation of phenacetin. Ikeya et al. (1989) found that the human CYP1A2 gene spans almost 7.8 kb and contains 7 exons. The CYP1A2 gene is mapped on 15q24.1. CYP1A2 accounts for nearly 15% of the cytochrome P450 in the human liver. CYP1A2 displays higher activity in men than in women, and is inhibited by oral contraceptives. Inducers of CYP1A2 include cruciferous vegetables. Cigarette smoking has also been shown to increase CYP1A2 activity. Expression of CYP1A2 appears to be induced by various dietary constituents.

## Reference

1. Browning, S. L., Tarekegn, A., Bekele, E., Bradman, N., Thomas, M. G. CYP1A2 is more variable than previously thought: a genomic biography of the gene behind the human drug-metabolizing enzyme. *Pharmacogenet. Genomics* 20: 647-664, 2010.
2. Ikeya, K., Jaiswal, A. K., Owens, R. A., Jones, J. E., Nebert, D. W., Kimura, S. Human CYP1A2: sequence, gene structure, comparison with the mouse and rat orthologous gene, and differences in liver 1A2 mRNA expression. *Molec. Endocr.* 3: 1399-1408, 1989.
3. Nakajima, M., Yokoi, T., Mizutani, M., Kinoshita, M., Funayama, M., Kamataki, T. Genetic polymorphism in the 5-prime-flanking region of human CYP1A2 gene: effect on the CYP1A2 inducibility in humans. *J. Biochem.* 125: 803-808, 1999.