

Anti-Cytochrome P450 1A2/CYP1A2 Antibody Picoband™

Catalog Number: PB9545

About CYP1A2

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.

Overview

Product Name	Anti-Cytochrome P450 1A2/CYP1A2 Antibody Picoband™
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Cytochrome P450 1A2/CYP1A2 Antibody Picoband™ catalog # PB9545. Tested in IHC, WB applications. This antibody reacts with Human, Mouse, Rat.
Application	IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Storage Instructions	Store at -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P05177

Technical Details

Immunogen	E.coli-derived human CYP1A2 recombinant protein (Position: H185-D320). Human CYP1A2 shares 69.9% and 72.1% amino acid (aa) sequence identity with mouse and rat CYP1A2, respectively.
Predicted Reactive Species	Bovine, Canine, Horse, Monkey, Rabbit
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG

Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	<p>Dilute the sample so that the expected range of concentrations fall within the detection range of this kit.</p> <p>If the expected range of concentration is unknown, a pilot test should be conducted to decide the optimal dilution ratio for your samples.</p> <p>Some PubMed article(s) citing the expression level of this target are as follows:</p> <p>Boster Bio's internal QC testing used:</p> <p>Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, Mouse, Rat, By Heat</p> <p>Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat</p>

Anti-Cytochrome P450 1A2/CYP1A2 Antibody Picoband™ (PB9545) Images

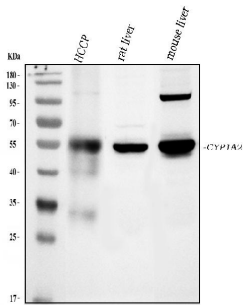


Figure 1. Western blot analysis of CYP1A2 using anti-CYP1A2 antibody (PB9545).

Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.

Lane 1: human HCCP tissue lysates,

Lane 2: rat liver tissue lysates,

Lane 3: mouse liver tissue lysates.

After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-CYP1A2 antigen affinity purified polyclonal antibody (Catalog # PB9545) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for CYP1A2 at approximately 58 kDa. The expected band size for CYP1A2 is at 58 kDa.

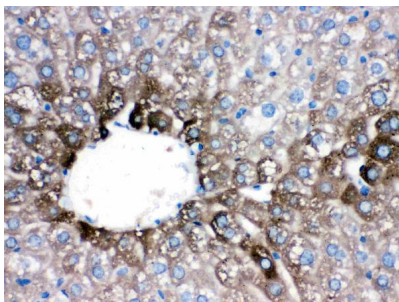


Figure 2. IHC analysis of CYP1A2 using anti-CYP1A2 antibody (PB9545).

CYP1A2 was detected in a paraffin-embedded section of mouse liver tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit anti-CYP1A2 Antibody (PB9545) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.

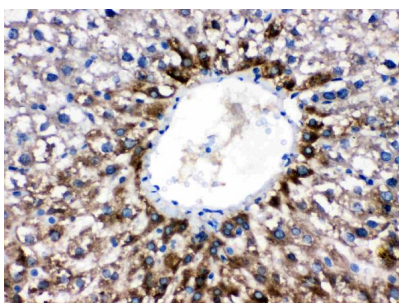
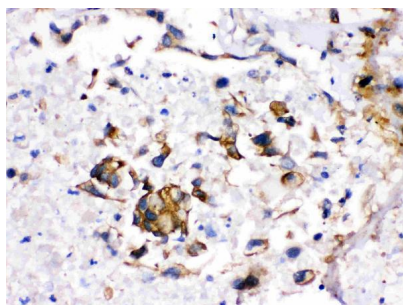


Figure 3. IHC analysis of CYP1A2 using anti-CYP1A2 antibody (PB9545).

CYP1A2 was detected in a paraffin-embedded section of rat liver tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit anti-CYP1A2 Antibody (PB9545) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.

Figure 4. IHC analysis of CYP1A2 using anti-CYP1A2 antibody (PB9545).

CYP1A2 was detected in a paraffin-embedded section of



human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit anti-CYP1A2 Antibody (PB9545) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Streptavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.

3 Publications Citing This Product

1. PubMed ID: 10.1016/j.rvsc.2017.11.014, Effect of enrofloxacin and roxarsone on CYP450s in pig
2. PubMed ID: 25319358, Jiang Y, Fan X, Wang Y, Chen P, Zeng H, Tan H, Gonzalez Fj, Huang M, Bi H. Toxicol Sci. 2015 Jan;143(1):107-15. Doi: 10.1093/Toxsci/Kfu216. Epub 2014 Oct 14. Schisandrol B Protects Against Acetaminophen-Induced Hepatotoxicity By Inhibition Of Cyp-...
3. PubMed ID: 25217484, Fan X, Jiang Y, Wang Y, Tan H, Zeng H, Wang Y, Chen P, Qu A, Gonzalez Fj, Huang M, Bi H. Drug Metab Dispos. 2014 Dec;42(12):1982-90. Doi: 10.1124/Dmd.114.059535. Epub 2014 Sep 12. Wuzhi Tablet (Schisandra Sphenanthera Extract) Protects Against Ace...

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