BOSTER BIOLOGICAL TECHNOLOGY Co.,Ltd.
3942 B Valley Ave, Pleasanton, CA, 94566
Phone: 888-466-3604 Fax: 925-215-2184 Email: boster@bosterbio.com Web: www.bosterbio.com

Polyclonal Anti-CYP1A1 Picoband™ Antibody

Catalog Number: PB9544

Description

Gene Name	cytochrome P450, family 1, subfamily A, polypeptide 1
Recommended Protein Name	Cytochrome P450 1A1
Lot No.	0951512Da784472
Size	100μg/vial
Form	lyophilized
Ig type	Rabbit IgG
Specificity	No cross reactivity with other proteins.
Purification	Immunogen affinity purified.
Species	**Reacts with:** human, mouse, rat
Immunogen	E.coli-derived human CYP1A1 recombinant protein (Position: H183-D320). Human CYP1A1 shares 81.2% amino acid (aa) sequence identity with both mouse and rat CYP1A1.
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na_2HPO_4, 0.05mg NaN_3.

Application

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

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

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, at 4˚C for one month. 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) and IHC(F).

Background

CYP1A1 is involved in phase I xenobiotic and drug metabolism (one substrate of it is theophylline). It is inhibited by fluoroquinolones and macrolides and induced by aromatic hydrocarbons. CYP1A1 is also known as AHH (aryl hydrocarbon hydroxylase). It is involved in the metabolic activation of aromatic hydrocarbons (polycyclic aromatic hydrocarbons, PAH), for example, benzo(a)pyrene (BP), by transforming it to an epoxide. In this reaction, the oxidation of benzo[a]pyrene is catalysed by CYP1A1 to form BP-7,8-epoxide, which can be further oxidized by epoxide hydrolase (EH) to form BP-7,8-dihydrodiol. Finally CYP1A1 catalyses this intermediate to form BP-7,8-dihydrodiol-9,10-epoxide, which is the ultimate carcinogen. However, an in vivo experiment with gene-deficient mice has found that the hydroxylation of benzo(a)pyrene by CYP1A1 can have an overall protective effect on the DNA, rather than contributing to potentially carcinogenic DNA modifications. This effect is likely due to the fact that CYP1A1 is highly active in the intestinal mucosa, and thus inhibits infiltration of ingested benzo(a)pyrene carcinogen into the systemic circulation.

Reference

1. Beresford AP (1993). "CYP1A1: friend or foe?". Drug Metabolism Reviews 25 (4): 503–17.
2. Uno, S (2004). "Oral exposure to benzo[a]pyrene in the mouse: detoxication by inducible cytochrome P450 is more important than metabolic activation.". Mol Pharmacol 65 (5): 1225–37.