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Anti-Cytochrome p450 2C19/CYP2C19 Antibody Picoband™ (monoclonal, 10G5)

Catalog # ABO14972

Product Information

Application	WB, IHC, FC
Primary Accession	P33261
Host	Mouse
Isotype	Mouse IgG1
Reactivity	Rat, Human, Mouse, Monkey
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-Cytochrome p450 2C19/CYP2C19 Antibody Picoband™ (monoclonal, 10G5) . Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Monkey, Mouse, Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	1557
Other Names	Cytochrome P450 2C19, 1.14.14.1, (R)-limonene 6-monooxygenase, 1.14.14.53, (S)-limonene 6-monooxygenase, 1.14.14.51, (S)-limonene 7-monooxygenase, 1.14.14.52, CYPIIC17, CYPIIC19, Cytochrome P450-11A, Cytochrome P450-254C, Fenbendazole monooxygenase (4'-hydroxylating), 1.14.14.75, Mephenytoin 4-hydroxylase, CYP2C19
Calculated MW	55945
Application Details	Western blot, 0.1-0.5 □g/ml, Mouse, Rat, Monkey Immunohistochemistry (Paraffin-embedded Section), 0.5-1 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl, 0.2mg Na2HPO4, 0.01mg NaN3.
Clone Names	Clone: 10G5
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human Cytochrome p450 2C19/CYP2C19.
Purification	Immunogen affinity purified.
Storage	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.

Protein Information

Name CYP2C19

Function A cytochrome P450 monooxygenase involved in the metabolism of polyunsaturated fatty acids (PUFA) (PubMed:18577768, PubMed:19965576, PubMed:20972997). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (NADPH--hemoprotein reductase) (PubMed:18577768, PubMed:19965576, PubMed:20972997). Catalyzes the hydroxylation of carbon-hydrogen bonds. Hydroxylates PUFA specifically at the omega-1 position (PubMed:18577768). Catalyzes the epoxidation of double bonds of PUFA (PubMed:19965576, PubMed:20972997). Also metabolizes plant monoterpenes such as limonene. Oxygenates (R)- and (S)-limonene to produce carveol and perillyl alcohol (PubMed:11950794). Responsible for the metabolism of a number of therapeutic agents such as the anticonvulsant drug S-mephenytoin, omeprazole, proguanil, certain barbiturates, diazepam, propranolol, citalopram and imipramine. Hydroxylates fenbendazole at the 4' position (PubMed:23959307).

Cellular Location Endoplasmic reticulum membrane; Peripheral membrane protein. Microsome membrane; Peripheral membrane protein

Background

Cytochrome P450 2C19 (abbreviatedCYP2C19) encodes a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. This protein localizes to the endoplasmic reticulum and is known to metabolize many xenobiotics, including the anticonvulsive drug mephenytoin, omeprazole, diazepam and some barbiturates. Polymorphism within this gene is associated with variable ability to metabolize mephenytoin, known as the poor metabolizer and extensive metabolizer phenotypes. The gene is located within a cluster of cytochrome P450 genes on chromosome 10q24.

Images

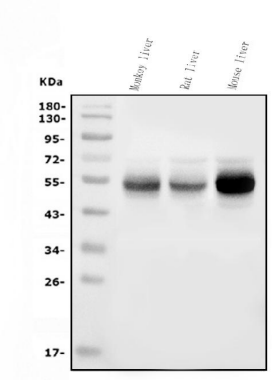

Figure 1. Western blot analysis of Cytochrome p450 2C19/CYP2C19 using anti-Cytochrome p450 2C19/CYP2C19 antibody (M02102).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours.
The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: monkey liver tissue lysates,
Lane 2: rat liver tissue lysates,
Lane 3: mouse liver tissue lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes.
Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Cytochrome p450 2C19/CYP2C19 antigen affinity purified monoclonal antibody (Catalog # M02102) at 0.5 µg/mL overnight at 4°C, then washed with

TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Cytochrome p450 2C19/CYP2C19 at approximately 55KD. The expected band size for Cytochrome p450 2C19/CYP2C19 is at 55KD.

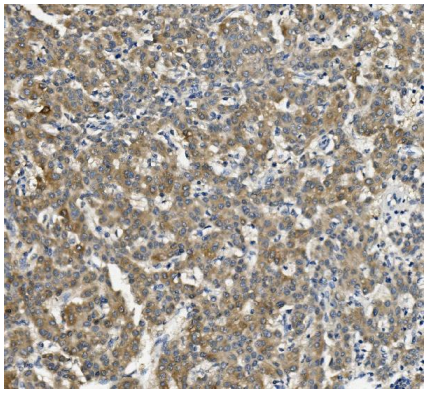

Figure 2. IHC analysis of Cytochrome p450 2C19/CYP2C19 using anti-Cytochrome p450 2C19/CYP2C19 antibody (M02102).
Cytochrome p450 2C19/CYP2C19 was detected in paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 µg/ml mouse anti-Cytochrome p450 2C19/CYP2C19 Antibody (M02102) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

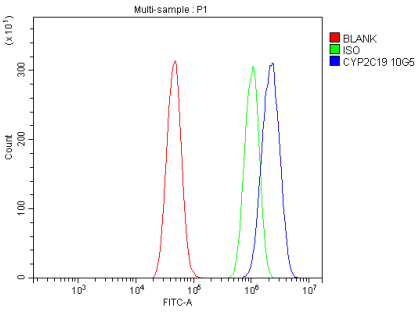

Figure 3. Flow Cytometry analysis of A431 cells using anti-Cytochrome p450 2C19/CYP2C19 antibody (M02102). Overlay histogram showing A431 cells stained with M02102 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Cytochrome p450 2C19/CYP2C19 Antibody (M02102, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

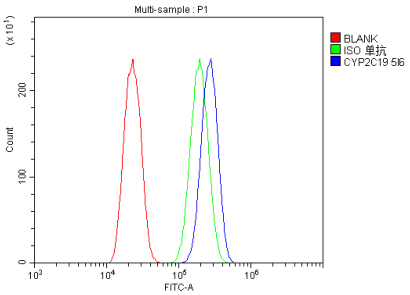

Figure 4. Flow Cytometry analysis of U20S cells using anti-Cytochrome p450 2C19/CYP2C19 antibody (M02102). Overlay histogram showing U20S cells stained with M02102 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Cytochrome p450 2C19/CYP2C19 Antibody (M02102, 1 µg/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x106 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x106) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.