abcam

ab250842

Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Carrier free	Yes
Clone number	EPR17868
Purification technique	Affinity purification Protein A
Concentration	1.015 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	-

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information CYP2D6

Function	A cytochrome P450 monooxygenase involved in the metabolism of fatty acids, steroids and retinoids (PubMed:18698000, PubMed:19965576, PubMed:20972997, PubMed:21289075, PubMed:21576599). 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:18698000, PubMed:19965576, PubMed:20972997, PubMed:21289075, PubMed:21576599). Catalyzes the epoxidation of double bonds of polyunsaturated fatty acids (PUFA) (PubMed:19965576, PubMed:20972997). Metabolizes endocannabinoid arachidonoylethanolamide (anandamide) to 20-hydroxyeicosatetraenoic acid ethanolamide (20-HETE-EA) and 8,9-, 11,12-, and 14,15-epoxyeicosatrienoic acid

ethanolamides (EpETrE-EAs), potentially modulating endocannabinoid system signaling (PubMed:18698000, PubMed:21289075). Catalyzes the hydroxylation of carbon-hydrogen bonds. Metabolizes cholesterol toward 25-hydroxycholesterol, a physiological regulator of cellular cholesterol homeostasis (PubMed:21576599). Catalyzes the oxidative transformations of all-trans retinol to all-trans retinal, a precursor for the active form all-trans-retinoic acid (PubMed:10681376). Also involved in the oxidative metabolism of drugs such as antiarrhythmics, adrenoceptor antagonists, and tricyclic antidepressants.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	+4°C
Storage information	Do Not Freeze

Notes

ab250842 is the carrier-free version of ab185625.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Conjugation ready
Our carrier-free antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.

Use our conjugation kits for antibody conjugates that are ready-to-use in as little as 20 minutes with 1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.

Compatibility
This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	CYP2D6 also known as cytochrome P450 2D6 is a critical enzyme in the cytochrome P450 superfamily. It possesses a molecular mass of approximately 55 kDa. CYP2D6 is primarily expressed in the liver and to a lesser extent in the brain. As a monooxygenase it catalyzes the oxidation of organic substances including the metabolism of many xenobiotics and drugs. Its activity varies greatly among individuals due to genetic polymorphisms making it an important target for pharmacogenomic studies.
Biological function summary	Enzymes related to drug metabolism perform essential roles in the detoxification of foreign chemicals. CYP2D6 is notably part of the microsomal enzyme complex in the liver. It facilitates the transformation of lipophilic compounds into more water-soluble metabolites rendering them easier for the body to excrete. This enzyme affects the bioavailability and efficacy of many medications such as antidepressants antipsychotics and beta-blockers. Its role is integral in the activation of certain prodrugs converting them into their active pharmacological forms.
Pathways	CYP2D6 functions significantly in drug metabolism and clearance pathways. It takes part in the Phase I metabolism pathway where it initiates the oxidation of drugs setting the stage for further modifications. It interacts closely with other CYP enzymes like CYP3A4 which sometimes share substrates and inhibitors affecting their metabolic activities. CYP2D6's interaction with these pathways emphasizes its involvement in the intricate network of enzyme-mediated drug handling in the body.
Associated diseases and disorders	Alterations in CYP2D6 activity relate to variations in drug metabolism leading to treatment challenges. For instance poor metabolizers may have increased risks of side effects or therapeutic failures in drugs like codeine which relies on CYP2D6 for activation. Additionally abnormal CYP2D6 activity associates with certain psychiatric disorders where specific drugs require precise metabolic conversion. The interaction between CYP2D6 and other proteins such as CYP3A4 further complicates its role in pharmacotherapy and its impact on individual responses to drugs.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

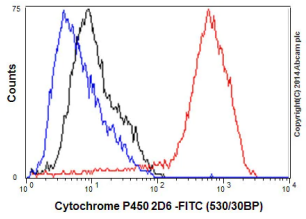
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

---

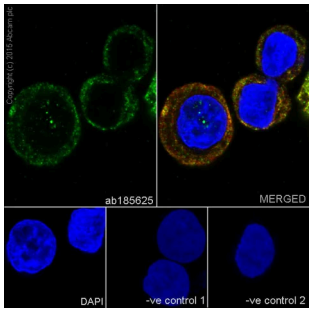
9 product images



Flow Cytometry (Intracellular) - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Flow Cytometry (Intracellular) staining using rabbit Anti-CYP2D6 antibody

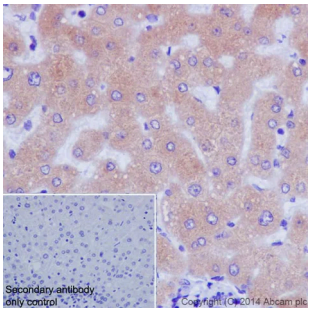
This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Intracellular flow cytometric analysis of 2% paraformaldehyde-fixed HT-29 (Human colorectal adenocarcinoma cells) cells labeling CYP2D6 with ab185625 at 1/300 dilution (red) compared with a rabbit monoclonal IgG isotype control (ab172730) (black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody; blue). Goat anti rabbit IgG (FITC) at 1/150 dilution was used as the secondary antibody.



Immunocytochemistry/ Immunofluorescence - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Immunofluorescent analysis of 4% paraformaldehyde-fixed, 0.1% Triton X-100 permeabilized HT-29 (Human colorectal adenocarcinoma cells) cells labeling CYP2D6 with ab185625 at 1/1000 dilution, followed by Goat anti-rabbit IgG (Alexa Fluor® 488) (ab150077) secondary antibody at 1/400 dilution (green). Cytoplasmic staining on HT-29 cell line is observed. The nuclear counter stain is DAPI (blue). Tubulin is detected with ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution and ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution (red).
The negative controls are as follows:
-ve control 1: ab185625 at 1/1000 dilution followed by ab150120 (AlexaFluor®594 Goat anti-Mouse secondary) at 1/500 dilution.
-ve control 2: ab7291 (anti-Tubulin mouse mAb) at 1/500 dilution followed by ab150077 (Alexa Fluor®488 Goat Anti-Rabbit IgG H&L) at 1/400 dilution.



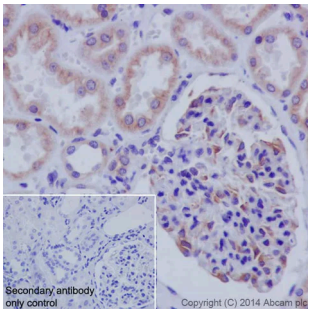
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human liver tissue labeling CYP2D6 with ab185625 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on Human liver is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



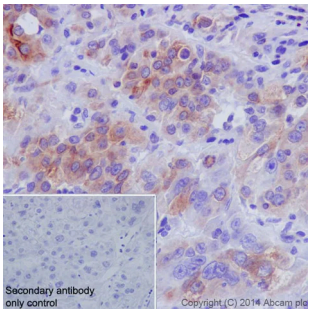
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human kidney tissue labeling CYP2D6 with ab185625 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on Human kidney is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



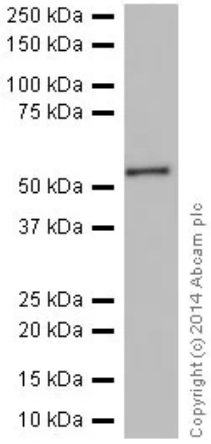
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Immunohistochemical analysis of paraffin-embedded Human hepatocellular carcinoma tissue labeling CYP2D6 with ab185625 at 1/500 dilution, followed by Goat Anti-Rabbit IgG H&L (HRP) (ab97051) secondary antibody at 1/500 dilution. Cytoplasmic staining on Human hepatocellular carcinoma is observed. Counter stained with Hematoxylin.

Negative control: Used PBS instead of primary antibody, secondary antibody is Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/500 dilution.

Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Western blot - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-CYP2D6 antibody [EPR17868] (ab185625) at 1/1000 dilution

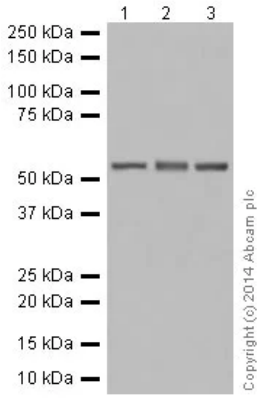
All lanes:
HT-29 (Human colorectal adenocarcinoma cells) whole cell lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 37 kDa, 56 kDa

Observed band size: 55 kDa



Western blot - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Western blot staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

All lanes:
Western blot - Anti-CYP2D6 antibody [EPR17868] (ab185625) at 1/10000 dilution

Lane 1:
HeLa (Human epithelial cells from cervix adenocarcinoma) whole cell lysate at 20 µg

Lane 2:
K562 (Human chronic myelogenous leukemia cells from bone marrow) whole cell lysate at 20 µg

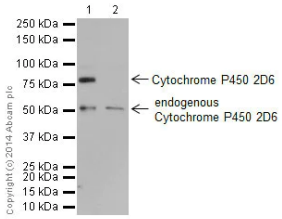
Lane 3:
HepG2 (Human liver hepatocellular carcinoma) whole cell lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 56 kDa

Observed band size: 55 kDa



Western blot - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Western blot staining using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

Full-length CYP2D6 293T overexpressed lysates contain GFP tagged-aa1-497.

All lanes:
Western blot - Anti-CYP2D6 antibody [EPR17868] (ab185625) at 1/10000 dilution

Lane 1:
Full-length CYP2D6 transfected 293T cell lysate at 10 µg

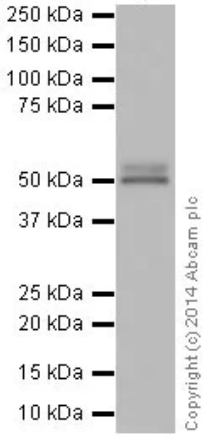
Lane 2:
Non-transfected 293T lysate at 10 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 56 kDa

Observed band size: 81 kDa



Western blot - Anti-CYP2D6 antibody [EPR17868] - BSA and Azide free (ab250842)

CYP2D6 Western blot staining of Human fetal liver tissue lysate using rabbit Anti-CYP2D6 antibody

This data was developed using ab185625, the same antibody clone in a different buffer formulation.
Blocking and dilution buffer: 5% NFDM/TBST.

Based on the sequence analysis, ab185625 recognizes two isoforms with the predicted MWs of 55kDa and 50kDa respectively.

All lanes:
Western blot - Anti-CYP2D6 antibody [EPR17868] (ab185625) at 1/10000 dilution

All lanes:
Human fetal liver tissue lysate at 20 µg

Secondary

All lanes:
Anti-Rabbit IgG (HRP), specific to the non-reduced form of IgG at 1/1000 dilution

Predicted band size: 56 kDa

Observed band size: 50 kDa, 55 kDa

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