abcam

ab231701

Anti-DPD antibody [EPR8811] - 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	EPR8811
Purification technique	Affinity purification Protein A
Concentration	1.008 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information Dihydropyrimidine dehydrogenase [NADP(+)]

Function	Involved in pyrimidine base degradation (PubMed:1512248). Catalyzes the reduction of uracil and thymine (PubMed:1512248). Also involved the degradation of the chemotherapeutic drug 5-fluorouracil (PubMed:1512248).

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

ab231701 is the carrier-free version of ab134922.

Species reactivity

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

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	DPD also known as dihydropyrimidine dehydrogenase is an enzyme important for the breakdown of pyrimidines particularly uracil and thymine. The DPD protein has an important role in the initial step of pyrimidine catabolism. It catalyzes the NADPH-dependent reduction of these pyrimidines to dihydrouracil and dihydrothymine. It consists of 1025 amino acids giving it a mass of approximately 111 kDa. DPD is expressed in various tissues with significant expression in the liver and to a lesser extent in peripheral blood lymphocytes.

Biological function summary	Dihydropyrimidine dehydrogenase impacts nucleotide metabolism which is significant for cellular replication and repair processes. DPD exists as part of a multi-enzyme complex that handles pyrimidine metabolism. It serves an important regulatory function by controlling the level of pyrimidines within cells. This regulation keeps the balance of free nucleotides which is critical for DNA synthesis and overall cellular homeostasis.
Pathways	DPD holds an important position in pyrimidine metabolism pathways and the drug metabolism pathway specifically influencing fluoropyrimidine-based chemotherapeutic agents. Within the pyrimidine metabolic pathway DPD links to other enzymes that further breakdown pyrimidines into more basic compounds. In drug metabolism DPD plays a vital role by metabolizing drugs like 5-fluorouracil. Its activity affects how individuals process these medications linking it to enzymes like thymidylate synthase that share pathways in cancer treatment drug action.
Associated diseases and disorders	DPD deficiency relates to a genetic disorder that causes an excessive build-up of uracil and thymine leading to developmental disorders and neurological problems. Additionally abnormalities in DPD activity influence the efficacy and toxicity of fluorouracil chemotherapy in cancer treatments. DPD enzymatic activity when not properly regulated can lead to severe toxic reactions especially in relation to therapies reliant on enzymes such as thymidylate synthase emphasizing the critical interplay between these proteins in the management of fluoropyrimidine drug treatments.

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

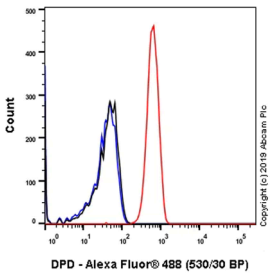
We do not recommend this combination. It is not covered by our product promise.

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.

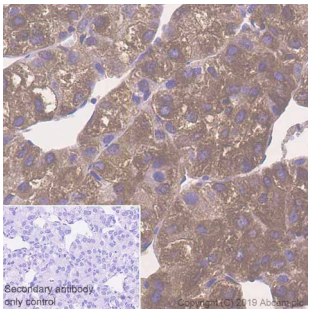
6 product images



Flow Cytometry (Intracellular) - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

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

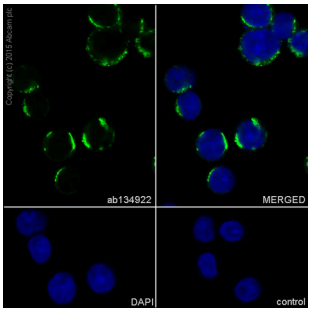
Intracellular Flow Cytometry analysis of THP-1 (Human monocytic leukemia monocyte) cells labeling DPD with Purified ab134922 at 1/50 dilution (10 µg/ml) (Red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue). This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134922)



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

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

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human hepatocellular carcinoma tissue sections labeling DPD with Purified ab134922 at 1:500 dilution (0.998 µg/ml). Heat mediated antigen retrieval using Bond™ Epitope Retrieval Solution 1 (pH 6.0). Rabbit specific IHC polymer detection kit HRP/DAB (ab209101) was used for detection. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134922)

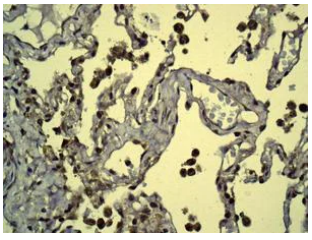


Immunocytochemistry/ Immunofluorescence - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

DPD Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-DPD antibody

Immunocytochemistry/Immunofluorescence analysis Jurkat (human acute T cell leukaemia) cells labelling DPD with purified ab134922 at a dilution of 1/500. Cells were fixed with 100% methanol. An Alexa Fluor® 488-conjugated goat anti-rabbit IgG (ab150077) at dilution of 1/1000 was used as the secondary antibody. Nuclei counterstained with DAPI (blue).
Secondary Only Control: PBS was used instead of the primary antibody as the negative control.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134922)

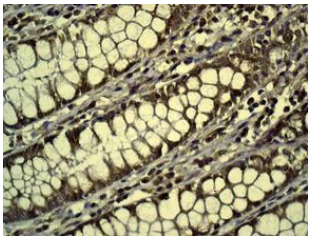


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

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

Immunohistochemical analysis of paraffin-embedded Human lung tissue staining DPD with unpurified ab134922 at 1/250 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134922)

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

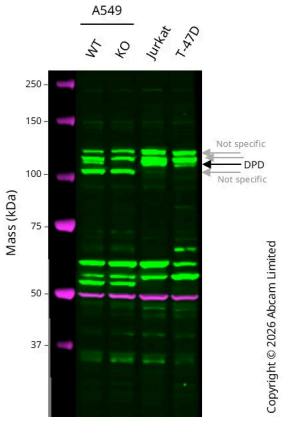


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

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

Immunohistochemical analysis of paraffin-embedded Human colon tissue staining DPD with unpurified ab134922 at 1/250 dilution.
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (ab134922)

Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.



Western blot - Anti-DPD antibody [EPR8811] - BSA and Azide free (ab231701)

DPD Western blot staining using rabbit Anti-DPD antibody

This data was developed using ab134922 the same antibody clone in a different buffer formulation.

Western blot: Anti-DPD antibody [EPR8811] ab134922 staining at 1/1000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 110 kDa in Wild-type A549 cell line with no signal observed at this size in DPYD knockout A549 cell line. The target band is indicated by the black arrow. This antibody also detects three unidentifed proteins close to the target band which are indicated by the three grey arrows. To generate this image, samples were run on an SDS-PAGE gel for two hours to ensure adequate separation of the specific band from cross-reactive bands, then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-DPD antibody [EPR8811] (ab134922) at 1/1000 dilution

Lane 1:
Wild-type A549 cell lysates at 20 µg

Lane 2:
DPYD knockout A549 cell lysates at 20 µg

Lane 3:

Jurkat cell lysates at 20 µg

Lane 4:
T-47D cell lysates at 20 µg

Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 110 kDa

Observed band size: 110 kDa

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