abcam

ab54797

Anti-DPD antibody [7D4]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human Dihydropyrimidine dehydrogenase [NADP(+)] aa 1-150. The exact immunogen used to generate this antibody is proprietary information. Database link Q12882
Clone number	7D4
Purity	Tissue culture supernatant
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

WB

Tested

Species	Human
Dilution info	-
Notes	-

ICC/IF

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	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 12/3/19. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

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.

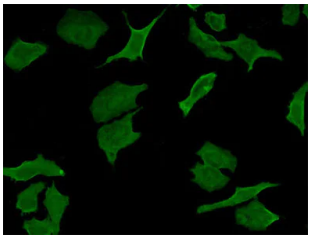
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

---

3 product images

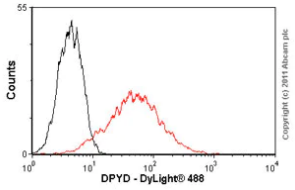


Immunocytochemistry/ Immunofluorescence - Anti-DPD antibody [7D4] (ab54797)

DPD Immunocytochemistry/ Immunofluorescence staining using mouse Anti-DPD antibody

ab54797 at 10 ug/ml staining DPD in human Hela cells by Immunocytochemistry / Immunofluorescence.

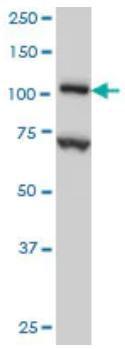
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-DPD antibody [7D4] (ab54797)

DPD Flow Cytometry staining using mouse Anti-DPD antibody

Overlay histogram showing HepG2 cells stained with ab54797 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab54797, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in HepG2 cells fixed with 100% methanol (5 min)/permeabilized in 0.1% PBS-Tween used under the same conditions.
This image was generated using the ascites version of the product.



Western blot - Anti-DPD antibody [7D4] (ab54797)

DPD Western blot staining using mouse Anti-DPD antibody

DPD antibody (ab54797) at 1ug/lane + HeLa cell lysate at 25ug/lane.
This image was generated using the ascites version of the product.

All lanes:
Western blot - Anti-DPD antibody [7D4] (ab54797)

Predicted band size: 111 kDa

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