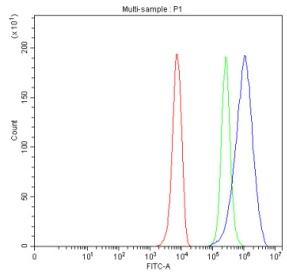
DPYD Antibody / Pyrimidine Metabolism Enzyme Antibody (R30854)

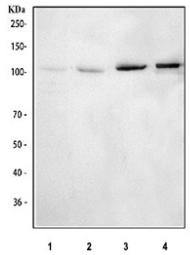
Catalog No.	Formulation	Size
R30854	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q12882
Applications	Western blot: 0.5-1ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This DPYD Antibody / Pyrimidine Metabolism Enzyme Antibody is available for research use only.



DPYD Antibody HepG2 Cells FACS. Flow cytometric analysis of fixed and permeabilized human HepG2 cells was performed using DPYD antibody at 1 ug per million cells following blocking with goat sera. DPYD, also known as Dihydropyrimidine Dehydrogenase and a Pyrimidine Metabolism Enzyme, catalyzes the rate limiting step in pyrimidine catabolism and plays a critical role in fluoropyrimidine drug metabolism. Red histogram: cells alone. Green histogram: isotype control. Blue histogram: DPYD antibody. The pronounced rightward shift of the DPYD antibody signal relative to the controls demonstrates specific detection of endogenous DPYD expression in HepG2 cells. These results support the utility of DPYD Antibody for studies of nucleotide metabolism, pharmacogenomics, and cancer biology.



DPYD Antibody Human Mouse Rat WB. Western blot analysis of DPYD expression using a DPYD antibody. Lane 1: human HeLa whole cell lysate. Lane 2: human THP-1 whole cell lysate. Lane 3: rat liver tissue lysate. Lane 4: mouse liver tissue lysate. DPYD, also known as Dihydropyrimidine Dehydrogenase and a Pyrimidine Metabolism Enzyme, catalyzes the rate limiting step in pyrimidine catabolism and is essential for fluoropyrimidine drug metabolism. A distinct band is detected at approximately 111 kDa, corresponding to the expected molecular weight of full length DPYD. Signal intensity is stronger in rat and mouse liver samples, consistent with the prominent role of hepatic tissues in nucleotide turnover and drug metabolism. These results support the utility of DPYD Antibody for studies of pyrimidine metabolism, pharmacogenomics, and metabolic regulation.

Description

DPYD Antibody / Pyrimidine Metabolism Enzyme Antibody recognizes DPYD, also known as Dihydropyrimidine Dehydrogenase or DPD, a flavin dependent oxidoreductase that catalyzes the rate limiting step in pyrimidine catabolism. DPYD converts uracil and thymine into their corresponding dihydro metabolites and thereby regulates nucleotide turnover and cellular homeostasis. The enzyme contains flavin adenine dinucleotide, flavin mononucleotide, and iron sulfur clusters that facilitate electron transfer during pyrimidine degradation. Through these activities, DPYD plays a central role in maintaining balanced nucleotide pools required for DNA synthesis, cellular proliferation, and normal metabolic function.

DPYD is widely expressed in the liver, gastrointestinal tract, peripheral blood cells, and other tissues where it contributes to pyrimidine metabolism and cellular adaptation. Proper regulation of nucleotide degradation is essential for growth, tissue homeostasis, and responses to metabolic stress. By preventing accumulation of excess pyrimidines and their metabolites, DPYD helps maintain genomic stability and efficient cellular function. The enzyme also participates in pathways linked to energy metabolism and cellular responses to oxidative stress, highlighting its broader importance in physiology.

In addition to its endogenous metabolic functions, DPYD is responsible for the degradation of fluoropyrimidine chemotherapeutic agents including 5 fluorouracil and capecitabine. Variations in DPYD activity strongly influence the efficacy and toxicity of these drugs, making DPYD one of the most clinically relevant enzymes in pharmacogenomics. Inherited deficiencies in DPYD are associated with neurological abnormalities, developmental disorders, and severe adverse reactions to fluoropyrimidine based therapies. Consequently, assessment of DPYD expression and activity has become increasingly important in personalized medicine and cancer treatment.

Altered DPYD expression has been associated with colorectal cancer, breast cancer, pancreatic cancer, gastric cancer, and other malignancies. Increased enzyme activity may contribute to resistance to fluoropyrimidine chemotherapy, whereas reduced activity can predispose patients to drug toxicity. Because nucleotide metabolism is closely linked to cell proliferation and tumor growth, DPYD has emerged as an important biomarker in oncology and translational research. Ongoing studies continue to investigate how pyrimidine metabolism influences therapeutic responses and cancer progression.

DPYD Antibody / Pyrimidine Metabolism Enzyme Antibody is useful for investigations of nucleotide metabolism, pharmacogenomics, cancer biology, and cellular homeostasis. Detection of endogenous DPYD provides a valuable tool for studies of pyrimidine degradation, fluoropyrimidine metabolism, and mechanisms regulating cellular growth and drug responses.

Learn more about proteins involved in pyrimidine metabolism and drug responses by visiting our Metabolism Antibodies page, featuring DPYD antibodies and other enzymes that regulate nucleotide turnover and cellular metabolism.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the DPYD Antibody / Pyrimidine

Metabolism Enzyme Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

Amino acids 33-52 (AKKLDKKHWKRNPDKNCFNC-human) were used as the immunogen for this DPYD antibody.

Storage

After reconstitution, the DPYD antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Dihydropyrimidine Dehydrogenase Antibody, DPD Antibody, Uracil Degradation Enzyme Antibody, Thymine Catabolism Enzyme Antibody, Fluoropyrimidine Metabolism Protein Antibody, Pyrimidine Reductase Antibody, Dihydrouracil Dehydrogenase Antibody

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