SANTA CRUZ BIOTECHNOLOGY, INC.

DPYD (H-300): sc-50521

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Dihydropyrimidine dehydrogenase (DPYD) catalyzes the first rate-limiting step of the NADPH-dependent catabolism of uracil and thymine to dihydrouracil and dihydrothymine; thus, a deficiency of DPYD leads to an accumulation of uracil and thymine. Abnormal concentrations of these metabolites in bodily fluids may be the cause of neurological disease and a contraindication for treatment of cancer patients with certain pyrimidine analogs. DPYD also catalyzes the anticancer agent 5-fluorouracil (5-FU) pathway and is involved in the efficacy and toxicity of 5-FU. Variations in DPYD concentration may arise from alterations at the transcriptional level of the dihydropyrimidine dehydrogenase gene. Specifically, hypermethylation of the DPYD promoter downregulates dihydropyrimidine dehydrogenase expression. Deficient DPYD alleles may constitute a risk factor for severe toxicity following treatment with 5-FU.

REFERENCES

1. Godtel, R., et al. 1978. Puerperal psychoses. Geburtshilfe Frauenheilkd 38: 304-316.
2. Tuchman, M., et al. 1989. Dihydropyrimidine dehydrogenase activity in human blood mononuclear cells. Enzyme 42: 15-24.

CHROMOSOMAL LOCATION

Genetic locus: DPYD (human) mapping to 1p21.3; Dpyd (mouse) mapping to 3 G1.

SOURCE

DPYD (H-300) is a rabbit polyclonal antibody raised against amino acids 1-300 mapping at the N-terminus of DPYD of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DPYD (H-300) is recommended for detection of DPYD of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DPYD (H-300) is also recommended for detection of DPYD in additional species, including bovine, porcine and avian.

Suitable for use as control antibody for DPYD siRNA (h): sc-45326, DPYD siRNA (m): sc-45327, DPYD shRNA Plasmid (h): sc-45326-SH, DPYD shRNA Plasmid (m): sc-45327-SH, DPYD shRNA (h) Lentiviral Particles: sc-45326-V and DPYD shRNA (m) Lentiviral Particles: sc-45327-V.

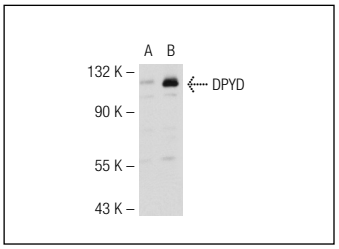
Molecular Weight of DPYD: 111 kDa.

Positive Controls: DPYD (m2): 293T Lysate: sc-119840, HL-60 whole cell lysate: sc-2209 or HeLa whole cell lysate: sc-2200.

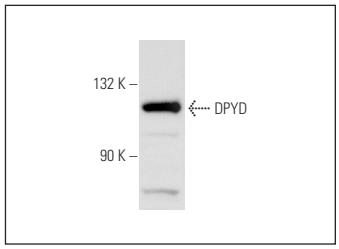
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



DPYD (H-300): sc-50521. Western blot analysis of DPYD expression in non-transfected: sc-117752 (**A**) and mouse DPYD transfected: sc-119840 (**B**) 293T whole cell lysates.



DPYD (H-300): sc-50521. Western blot analysis of DPYD expression in HL-60 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Sheftel, A.D., et al. 2012. The human mitochondrial ISCA1, ISCA2, and IBA57 proteins are required for [4Fe-4S] protein maturation. Mol. Biol. Cell 23: 1157-1166.
2. Stehling, O., et al. 2012. MMS19 assembles iron-sulfur proteins required for DNA metabolism and genomic integrity. Science 337: 195-199.
3. Stehling, O., et al. 2013. Human CIA2A-FAM96A and CIA2B-FAM96B integrate iron homeostasis and maturation of different subsets of cytosolic-nuclear iron-sulfur proteins. Cell Metab. 18: 187-198.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.