SANTA CRUZ BIOTECHNOLOGY, INC.

dCK (H-3): sc-393099

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The dCK/dGK family of proteins includes four different deoxyribonucleoside kinases including the cytoplasmic (TK1) and mitochondrial (TK2) thymidine kinases, and the deoxycytidine (dCK) and deoxyguanosine (dGK) kinases. Deoxyribonucleoside kinases catalyze the 5'-phosphorylation of 2'-deoxyribonucleosides with nucleoside triphosphates (NTPs) as phosphate donors. The dCK enzyme is associated with drug resistance and sensitivity, as both dCK and TK2 phosphorylate several antiviral and chemotherapeutic nucleoside analogs. Deficiency of dCK activity corresponds with resistance to antiviral and chemotherapeutic agents. dCK and TK1 localize to the cytosol, whereas dCK and TK2 localize to the mitochondria. These deoxyribonucleoside kinases are most abundantly expressed in muscle, brain and liver.

CHROMOSOMAL LOCATION

Genetic locus: DCK (human) mapping to 4q13.3; Dck (mouse) mapping to 5 E1.

SOURCE

dCK (H-3) is a mouse monoclonal antibody raised against amino acids 203-241 mapping near the C-terminus of dCK of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

dCK (H-3) is available conjugated to agarose (sc-393099 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393099 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393099 PE), fluorescein (sc-393099 FITC), Alexa Fluor® 488 (sc-393099 AF488), Alexa Fluor® 546 (sc-393099 AF546), Alexa Fluor® 594 (sc-393099 AF594) or Alexa Fluor® 647 (sc-393099 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393099 AF680) or Alexa Fluor® 790 (sc-393099 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

dCK (H-3) is recommended for detection of dCK of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

dCK (H-3) is also recommended for detection of dCK in additional species, including bovine and porcine.

Suitable for use as control antibody for dCK siRNA (h): sc-60509, dCK siRNA (m): sc-60510, dCK shRNA Plasmid (h): sc-60509-SH, dCK shRNA Plasmid (m): sc-60510-SH, dCK shRNA (h) Lentiviral Particles: sc-60509-V and dCK shRNA (m) Lentiviral Particles: sc-60510-V.

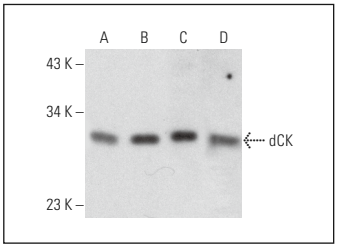
Molecular Weight of dCK: 30 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or C6 whole cell lysate: sc-364373.

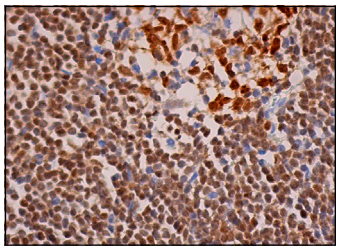
STORAGE

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

DATA



dCK (H-3): sc-393099. Western blot analysis of dCK expression in A-431 (**A**), MCF7 (**B**), RAW 264.7 (**C**) and C6 (**D**) whole cell lysates.



dCK (H-3): sc-393099. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node tissue showing nuclear staining of cells in germinal center and cells in non-germinal center.

SELECT PRODUCT CITATIONS

1. Almqvist, H., et al. 2016. CETSA screening identifies known and novel thymidylate synthase inhibitors and slow intracellular activation of 5-fluorouracil. Nat. Commun. 7: 11040.
2. Schneider, C., et al. 2017. SAMHD1 is a biomarker for cytarabine response and a therapeutic target in acute myeloid leukemia. Nat. Med. 23: 250-255.
3. Mynhardt, C., et al. 2018. Metformin-induced alterations in nucleotide metabolism cause 5-fluorouracil resistance but gemcitabine susceptibility in oesophageal squamous cell carcinoma. J. Cell. Biochem. 119: 1193-1203.
4. Prudner, B.C., et al. 2019. Arginine starvation and docetaxel induce c-Myc-driven hENT1 surface expression to overcome gemcitabine resistance in ASS1-negative tumors. Clin. Cancer Res. 25: 5122-5134.
5. Martínez-Arribas, B., et al. 2020. DCTPP1 prevents a mutator phenotype through the modulation of dCTP, dTTP and dUTP pools. Cell. Mol. Life Sci. 77: 1645-1660.
6. Koikawa, K., et al. 2021. Targeting Pin1 renders pancreatic cancer eradicable by synergizing with immunochemotherapy. Cell 184: 4753-4771.e27.
7. Pan, J., et al. 2021. Age-associated changes in microglia and astrocytes ameliorate blood-brain barrier dysfunction. Mol. Ther. Nucleic Acids 26: 970-986.
8. Guantay, L., et al. 2023. Deoxycytidine kinase (dCK) inhibition is synthetic lethal with BRCA2 deficiency. Drug Resist. Updat. 67: 100932.
9. Lei, L., et al. 2023. Transfer of miR-4755-5p through extracellular vesicles and particles induces decitabine resistance in recipient cells by targeting CDKN2B. Mol. Carcinog. 62: 743-753.

RESEARCH USE

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