

dCK (h): 293T Lysate: sc-111746

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 dGK and TK2 localize to the mitochondria. These deoxyribonucleoside kinases are most abundantly expressed in muscle, brain and liver.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM[™]. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 125450. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Galmarini, C.M., Cros, E., Thomas, X., Jordheim, L. and Dumontet, C. 2005. The prognostic value of cN-II and cN-III enzymes in adult acute myeloid leukemia. *Haematologica* 90: 1699-1701.
3. Bergman, A.M., Eijk, P.P., Ruiz van Haperen, V.W., Smid, K., Veerman, G., Hubeek, I., van den Ijssel, P., Ylstra, B. and Peters, G.J. 2005. *In vivo* induction of resistance to gemcitabine results in increased expression of ribonucleotide reductase subunit M1 as the major determinant. *Cancer Res.* 65: 9510-9516.
4. Karbownik, M., Brzezianska, E., and Lewinski, A. 2005. Increased expression of mRNA specific for thymidine kinase, deoxycytidine kinase or thymidine phosphorylase in human papillary thyroid carcinoma. *Cancer Lett.* 225: 267-273.
5. Hubeek, I., Peters, G.J., Broekhuizen, A.J., Talianidis, I., Sigmond, J., Gibson, B.E., Creutzig, U., Giaccone, G. and Kaspers, G.J. 2005. Immunocytochemical detection of deoxycytidine kinase in haematological malignancies and solid tumours. *J. Clin. Pathol.* 58: 695-699.
6. Smal, C., Vertommen, D., Bertrand, L., Ntamashimikro, S., Rider, M.H., Van Den Neste, E. and Bontemps, F. 2006. Identification of *in vivo* phosphorylation sites on human deoxycytidine kinase. Role of Ser 74 in the control of enzyme activity. *J. Biol. Chem.* 281: 4887-4893.

CHROMOSOMAL LOCATION

Genetic locus: DCK (human) mapping to 4q13.3.

PRODUCT

dCK (h): 293T Lysate represents a lysate of human dCK transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

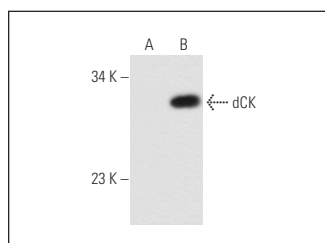
APPLICATIONS

dCK (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive dCK antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

dCK (2243C2): sc-81245 is recommended as a positive control antibody for Western Blot analysis of enhanced human dCK expression in dCK transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



dCK (2243C2): sc-81245. Western blot analysis of dCK expression in non-transfected: sc-117752 (A) and human dCK transfected: sc-111746 (B) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.