

Active Recombinant Full Length Human deoxycytidine kinase Protein, His tagged

Cat. No. DCK-06HFL Lot. No. (See product label)

SPECIFICATION

Product Overview	Recombinant full length (aa 1-260) Human Deoxycytidine kinase (dCK) variant (R104M, D133A) purified by nickel-sepharose chromatography.
Species	Human
Source	E.coli
ProteinLength	1-260 aa
Description	Deoxycytidine kinase (DCK) is required for the phosphorylation of several deoxyribonucleosides and their nucleoside analogs. Deficiency of DCK is associated with resistance to antiviral and anticancer chemotherapeutic agents. Conversely, increased deoxycytidine kinase activity is associated with increased activation of these compounds to cytotoxic nucleoside triphosphate derivatives. DCK is clinically important because of its relationship to drug resistance and sensitivity.
Tag	N-His
Molecular Mass	~31 kDa
AA Sequence	MATPPKRSCPSFSASSEGTRIKKISIEGNIAAGKSTFVNILKQLCEDWEVVPEPVARW CNVQSTQDEFEEELTMSQKNGGNVLQMMYEKPERWSFTFQTYACLS(R> M)IRAQLA SLNGKLKDAEKPVLFERSVYS(D> A)RYIFASNLYESECMNETEWTIYQDWDHDM NNQFGQSLELDGIIYLQATPETCLHRIYLRGRNEEQGIPLEYLEKLHYKHESWLLHRT

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LKTNFDYQLQEVPIILTDVNEDFKDKYESLVEKVKEFLSTL

Bio-activity

145 IU/mg protein; kcat 1.22/sec with dC as substrate; One unit of WT human dCK converts 1.0 μ mole of dC and ATP to dCMP and ADP per minute at pH 7.5 at 37 centigrade, as measured by a coupled enzyme system with 200 μ M dC and 1 mM ATP.

Purity

> 99% (SDS-PAGE)

Storage

At -80 centigrade.

Storage Buffer

25 mM Tris pH7.5, 500 mM NaCl, 20 % glycerol, 10 mM DTT, 1 mM EDTA

Concentration

4.8 mg/mL

Shipping

Dry ice.

Reference

1. Sabini E, Ort S, Monnerjahn C, Konrad M, Lavie A. Structure of human dCK suggests strategies to improve anticancer and antiviral therapy. *Nat Struct Biol.* 2003 Jul;10(7):513-9. Hazra S, Sabini E, Ort S, Konrad M, Lavie A.
2. Extending thymidine kinase activity to the catalytic repertoire of human deoxycytidine kinase. *Biochemistry.* 2009 Feb 17;48(6):1256-63. doi: 10.1021/bi802062w.
3. Neschadim A, Wang JC, Sato T, Fowler DH, Lavie A, Medin JA. Cell fate control gene therapy based on engineered variants of human deoxycytidine kinase. *Mol Ther.* 2012 May;20(5):1002-13. doi: 10.1038/mt.2011.298. Epub 2012 Jan 24.

GENE INFORMATION

Gene Name

DCK deoxycytidine kinase [*Homo sapiens* (human)]

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Official Symbol	DCK
Synonyms	DCK; deoxycytidine kinase; deoxycytidine kinase; deoxyadenosine kinase; deoxyguanosine kinase; deoxynucleoside kinase; EC 2.7.1.113; EC 2.7.1.74; EC 2.7.1.76
Gene ID	1633
mRNA Refseq	NM_000788
Protein Refseq	NP_000779
MIM	125450
UniProt ID	P27707

SDS-PAGE


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