

# Active Recombinant Full Length Human deoxycytidine kinase Protein, R104M, D133A, His tagged

**Cat. No.** DCK-05HFL    **Lot. No.** (See product label)

## SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Product Overview</b> | Recombinant full length (aa 1-260) wild-type Human Deoxycytidine kinase (dCK) purified by nickel-sepharose chromatography.                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Species</b>          | Human                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Source</b>           | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>ProteinLength</b>    | 1-260 aa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Description</b>      | 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. |
| <b>Tag</b>              | N-His                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Molecular Mass</b>   | ~31 kDa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>AA Sequence</b>      | MATPPKRSCPSFSASSEGETRIKKISIEGNIAAGKSTFVNILKQLCEDWEVVPEPVARW<br>CNVQSTQDEFEELTMSQKNGGNVLQMMYEKPERWSFTFQTYACLSRIRAQLASLN<br>GKLKDAEKPVLFERSVYSDDRYIFASNLYESECMNETEWTIYQDWDHWMNNQFGQ<br>SLELDGIIYLQATPETCLHRIYLRGRNEEQGIPLEYLEKLHYKHESWLLHRTLKTNFDY                                                                                                                                                                                                                                               |

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|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                       | LQEVPILTLDVNEDFKDKYESLVEKVKE                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Bio-activity</b>   | 6 IU/mg protein; kcat= 0.05/sec with dC as substrate; One unit of WT human dCK converts 1.0 $\mu$ 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 $\mu$ M dC and 1 mM ATP.                                                                                                                                                                                          |
| <b>Purity</b>         | > 99% (SDS-PAGE)                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Storage</b>        | At -80 centigrade.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Storage Buffer</b> | 25 mM Hepes pH7.5, 200 mM NaCitrate, 10% glycerol, 5 mM DTT, 1 mM EDTA                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Concentration</b>  | 4.6 mg/mL                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Shipping</b>       | Dry ice.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Reference</b>      | <p>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. Sabini E, Hazra S, Konrad M, Lavie A.</p> <p>2. Nonenantioselectivity property of human deoxycytidine kinase explained by structures of the enzyme in complex with L- and D-nucleosides. J Med Chem. 2007 Jun 28;50(13):3004-14. Epub 2007 May 27.</p> |

## GENE INFORMATION

|                        |                                                                         |
|------------------------|-------------------------------------------------------------------------|
| <b>Gene Name</b>       | DCK deoxycytidine kinase [ Homo sapiens (human) ]                       |
| <b>Official Symbol</b> | DCK                                                                     |
| <b>Synonyms</b>        | DCK; deoxycytidine kinase; deoxycytidine kinase; deoxyadenosine kinase; |

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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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