

Thymidine Kinase (FL-234): sc-134475

BACKGROUND

Thymidine Kinase (TK1) is a highly conserved phosphotransferase that is present in most living cells. Thymidine Kinase catalyzes the phosphorylation reaction: deoxythymidine + ATP = deoxythymidine 5'-phosphate + ADP; it is thus involved in the reaction chain to introduce deoxythymidine into the DNA. Thymidine kinase is required for the action of many antiviral drugs, such as azidothymidine (AZT), and is also used to select hybridoma cell lines in the production of monoclonal antibodies. Thymidine Kinase has many clinical applications as it is only present in anticipation of cell division. Because of this, Thymidine Kinase can be used as a proliferation marker in the diagnosis, treatment, and follow-up of malignant diseases, especially hematological malignancies. Thymidine Kinase may be observed as a monomer, dimer, trimer or tetramer.

REFERENCES

1. McDougall, J.K. 1970. Effects of adenoviruses on the chromosomes of normal human cells and cells trisomic for an E chromosome. *Nature* 225: 456-458.
2. Boone, C., et al. 1972. Assignment of three human genes to chromosomes (LDH-A to 11, TK to 17, and IDH to 20) and evidence for translocation between human and mouse chromosomes in somatic cell hybrids (Thymidine Kinase-lactate dehydrogenase A-isocitrate dehydrogenase-C-11, E-17, and F-20 chromosomes). *Proc. Nat. Acad. Sci. USA* 69: 510-514.
3. Chen, S., et al. 1977. Genetic homology between man and the chimpanzee: syntenic relationships of genes for galactokinase and Thymidine Kinase and adenovirus-12-induced gaps using chimpanzee-mouse somatic cell hybrids. *Somatic Cell Genet.* 2: 205-213.
4. Kozak, C.A. and Ruddle, F.H. 1978. Assignment of the genes for Thymidine Kinase and galactokinase to *Mus musculus* chromosome 11 and the preferential segregation of this chromosome in Chinese hamster/mouse somatic cell hybrids. *Somatic Cell Genet.* 3: 121-133.
5. Bradshaw, H.D. and Deininger, P.L. 1985. Human Thymidine Kinase gene: molecular cloning and nucleotide sequence of a cDNA expressible in mammalian cells. *Mol. Cell. Biol.* 4: 2316-2320.
6. Murphy, P.D., et al. 1986. A frequent polymorphism for the cytosolic Thymidine Kinase gene, TK1, (17q21- detected by the enzyme TaqI. *Nucleic Acids Res.* 14: 4381.

CHROMOSOMAL LOCATION

Genetic locus: TK1 (human) mapping to 17q25.3; Tk1 (mouse) mapping to 11 E2.

SOURCE

Thymidine Kinase (FL-234) is a rabbit polyclonal antibody raised against amino acids 1-234 representing full length Thymidine Kinase 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

Thymidine Kinase (FL-234) is recommended for detection of Thymidine Kinase 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).

Thymidine Kinase (FL-234) is also recommended for detection of Thymidine Kinase in additional species, including canine and bovine.

Suitable for use as control antibody for Thymidine Kinase siRNA (h): sc-72047, Thymidine Kinase siRNA (m): sc-72048, Thymidine Kinase shRNA Plasmid (h): sc-72047-SH, Thymidine Kinase shRNA Plasmid (m): sc-72048-SH, Thymidine Kinase shRNA (h) Lentiviral Particles: sc-72047-V and Thymidine Kinase shRNA (m) Lentiviral Particles: sc-72048-V.

Molecular Weight of Thymidine Kinase monomer: 24 kDa.

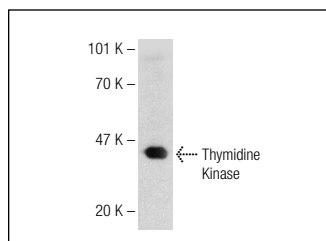
Molecular Weight of Thymidine Kinase dimer: 48 kDa.

Molecular Weight of Thymidine Kinase trimer: 72 kDa.

Molecular Weight of Thymidine Kinase tetramer: 96 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

DATA



Thymidine Kinase (FL-234): sc-134475. Western blot analysis of Thymidine Kinase expression in K-562 whole cell lysate.

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.

MONOS
Satisfaction
Guaranteed

Try **Thymidine Kinase (C-4): sc-377211** or **Thymidine Kinase (3B3.E11): sc-56967**, our highly recommended monoclonal alternatives to Thymidine Kinase (FL-234).