

Thymidine Kinase (G-13): sc-54407

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

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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-q22) detected by the enzyme TaqI. *Nucleic Acids Res.* 14: 4381.
7. Flemington, E., et al. 1987. Sequence, structure and promoter characterization of the human Thymidine Kinase gene. *Gene* 52: 267-277.

CHROMOSOMAL LOCATION

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

SOURCE

Thymidine Kinase (G-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 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.

Blocking peptide available for competition studies, sc-54407 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Thymidine Kinase (G-13) 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), 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 (G-13) is also recommended for detection of Thymidine Kinase in additional species, including equine, canine, bovine and avian.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.



Try **Thymidine Kinase (C-4): sc-377211** or **Thymidine Kinase (3B3.E11): sc-56967**, our highly recommended monoclonal alternatives to Thymidine Kinase (G-13).