

TK2 (B-22): sc-130895

BACKGROUND

Thymidine kinase 2 (TK2) salvages mitochondrial (mt) pyrimidine deoxynucleosides for mtDNA precursor synthesis. TK2 phosphorylates these nucleosides to their corresponding nucleoside monophosphates using a nucleotide triphosphate as a donor. Deficiency of mitochondrial TK2 manifests as severe skeletal myopathy during infancy, due to depletion of mtDNA. Mutant enzyme possesses similar K_m values to wildtype, however, the V_{max} is markedly decreased, leading to the decreased enzyme efficiency, which causes the disease.

REFERENCES

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- Vila, M.R., et al. 2003. Reversion of mtDNA depletion in a patient with TK2 deficiency. *Neurology* 60: 1203-1205.
- Wang, L., et al. 2003. Kinetic properties of mutant thymidine kinase 2 suggest a mechanism for mitochondrial DNA depletion myopathy. *J. Biol. Chem.* 278: 6963-6968.
- Barroso, J.F., et al. 2003. Tight binding of deoxyribonucleotide triphosphates to human thymidine kinase 2 expressed in *Escherichia coli*. Purification and partial characterization of its dimeric and tetrameric forms. *Biochemistry* 42: 15158-15169.
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- Han, T., et al. 2004. 2',3'-dideoxycytidine represses thymidine kinases 1 and 2 expression in T-lymphoid cells. *Life Sci.* 74: 835-842.

CHROMOSOMAL LOCATION

Genetic locus: TK2 (human) mapping to 16q21; Tk2 (mouse) mapping to 8 D3.

SOURCE

TK2 (B-22) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of TK2 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

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

APPLICATIONS

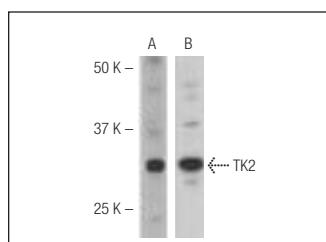
TK2 (B-22) is recommended for detection of TK2 of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for TK2 siRNA (h): sc-106616, TK2 siRNA (m): sc-154287, TK2 shRNA Plasmid (h): sc-106616-SH, TK2 shRNA Plasmid (m): sc-154287-SH, TK2 shRNA (h) Lentiviral Particles: sc-106616-V and TK2 shRNA (m) Lentiviral Particles: sc-154287-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



TK2 (B-22): sc-130895. Western blot analysis of TK2 expression in mouse muscle tissue extract (A) and Hep G2 whole cell lysate (B).

RESEARCH USE

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