SANTA CRUZ BIOTECHNOLOGY, INC.

Thymidine Kinase (C-4): sc-377211

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 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.

CHROMOSOMAL LOCATION

Genetic locus: TK1 (human) mapping to 17q25.3.

SOURCE

Thymidine Kinase (C-4) is a mouse monoclonal antibody raised against amino acids 1-234 representing full length Thymidine Kinase of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Thymidine Kinase (C-4) is available conjugated to agarose (sc-377211 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377211 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377211 PE), fluorescein (sc-377211 FITC), Alexa Fluor® 488 (sc-377211 AF488), Alexa Fluor® 546 (sc-377211 AF546), Alexa Fluor® 594 (sc-377211 AF594) or Alexa Fluor® 647 (sc-377211 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377211 AF680) or Alexa Fluor® 790 (sc-377211 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Thymidine Kinase (C-4) is recommended for detection of Thymidine Kinase of human origin by Western Blotting (starting dilution 1:100, 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).

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

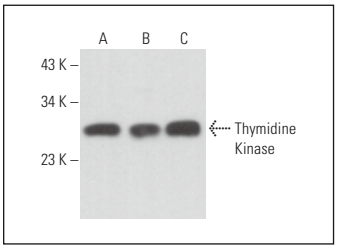
Molecular Weight of Thymidine Kinase tetramer: 96 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, HL-60 whole cell lysate: sc-2209 or THP-1 cell lysate: sc-2238.

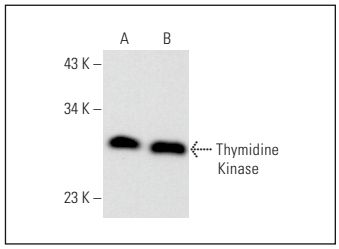
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Thymidine Kinase (C-4): sc-377211. Western blot analysis of Thymidine Kinase expression in K-562 (**A**), THP-1 (**B**) and TF-1 (**C**) whole cell lysates.



Thymidine Kinase (C-4): sc-377211. Western blot analysis of Thymidine Kinase expression in K-562 (**A**) and HL-60 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Krys, D., et al. 2019. Effect of hypoxia on human equilibrative nucleoside transporters hENT1 and hENT2 in breast cancer. FASEB J. 33: 13837-13851.
2. Martínez-Arribas, B., et al. 2020. DCTPP1 prevents a mutator phenotype through the modulation of dCTP, dTTP and dUTP pools. Cell. Mol. Life Sci. 77: 1645-1660.
3. Regmi, P., et al. 2020. SAHA overcomes 5-FU resistance in IFIT2-depleted oral squamous cell carcinoma cells. Cancers 12: 3527.

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.

PROTOCOLS

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