Anti-Human Thymidine Kinase 1 / TK1 Antibody [PSH18-62] - BSA and Azide free (Capture)

HA725239

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	ELISA(Cap)
Clone number:	PSH18-62

Description: 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.

Immunogen: Recombinant protein within Human Thymidine Kinase 1 / TK1.

Positive control: Recombinant Human Thymidine Kinase 1 / TK1 protein.

Subcellular location: Cytoplasm.

Database links: SwissProt: P04183 Human

Recommended Dilutions:

ELISA(Cap) Use at an assay dependent concentration. Can be paired for Sandwich ELISA with Rabbit monoclonal [PSH18-63] to Human Thymidine Kinase 1 / TK1 antibody (Detector) (HA725240) and Recombinant Human Thymidine Kinase 1 / TK1 protein as the standard. The reference range value is 31.25-16,000 pg/mL.

Storage Buffer: 1*PBS (pH7.4).

Storage Instruction: Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.

Purity: Protein A affinity purified.

Images

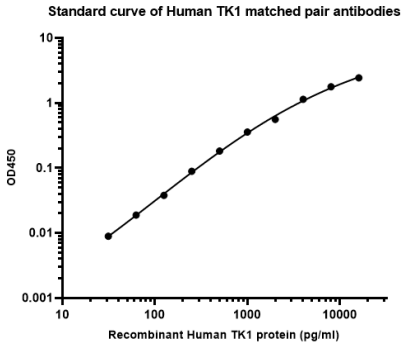

Fig1: Sandwich ELISA analysis of Human Thymidine Kinase 1 / TK1 matched pair antibodies

Capture: HA725239, Human Thymidine Kinase 1 / TK1 Rabbit mAb [PSH18-62]
Detector: HA725240, Human Thymidine Kinase 1 / TK1 Rabbit mAb [PSH18-63]

Elisa assay was performed by coating wells of a 96-well plate with 50 µl per well of capture antibody (HA725239) diluted in carbonate/bicarbonate buffer, at a concentration of 2 µg/ml overnight at 4℃. Wells of the plate were washed, blocked with 150 µl 0.05% tween-20 1%BSA blocking buffer, and incubated with serial diluted Recombinant human TK1 protein starting from 16,000 pg/ml to 0 pg/ml and detect antibody (HA725240, Biotin, 0.2 µg/ml) for 1 hour at 30℃ with shaking. Then the plate was washed and incubated with 50 µl per well of SA-HRP for 0.5 hour at 30℃ with shaking. Detection was performed using an Ultra TMB Substrate for 10 minutes at room temperature in the dark. The reaction was stopped with sulfuric acid and absorbances were read on a spectrophotometer at 450 nm.

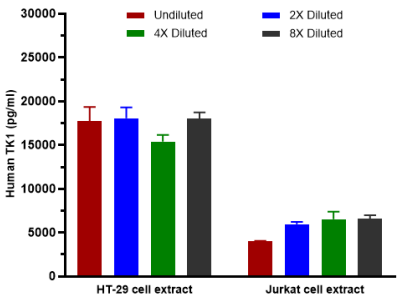

Fig2: Interpolated concentrations of native TK1 in HT-29 cell extract and Jurkat cell extract:

Capture: HA725239, Human Thymidine Kinase 1 / TK1 Rabbit mAb [PSH18-62]
Detector: HA725240, Human Thymidine Kinase 1 / TK1 Rabbit mAb [PSH18-63]

The concentrations of TK1 were measured in duplicates, interpolated from the TK1 standard curve and corrected for sample dilution. Undiluted samples are HT-29 cell extract 250 µg/mL and Jurkat cell extract 250 µg/mL. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean TK1 concentration was determined to be 17,292 pg/ml in HT-29 cell culture supernatant and 5,771 pg/ml in Jurkat cell extract.

Background References

1. Li Z et al. Pan-cancer analysis reveals that TK1 promotes tumor progression by mediating cell proliferation and Th2 cell polarization. Cancer Cell Int. 2024 Sep
2. Bitter EE et al. TK1 expression influences pathogenicity by cell cycle progression, cellular migration, and cellular survival in HCC 1806 breast cancer cells. PLoS One. 2023 Nov