

TKTL1 (M-14): sc-131803

BACKGROUND

Transketolase, a crucial component of the pentose phosphate pathway (PPP), functions as a link between glycolysis and the non-oxidative part of the PPP, allowing the cell to adapt to varying metabolic conditions in response to environmental changes. TKTL1 (transketolase-like 1), also known as TKR or TKT2, is a 596 amino acid protein that localizes to both the nucleus and the cytoplasm and belongs to the Transketolase family. Expressed in both adult and fetal lung, brain, liver, heart and kidney, TKTL1 exists as a homodimer that uses calcium and thiamine pyrophosphate as cofactors to catalyze the conversion of sedoheptulose 7-phosphate and D-glyceraldehyde 3-phosphate to D-ribose 5-phosphate and D-xylulose 5-phosphate. Overexpression of TKTL1, which exists as multiple alternatively spliced isoforms, is associated with diabetic complications and epithelial tumor growth and invasion.

REFERENCES

1. McCool, B.A., et al. 1993. Cloning of human Transketolase cDNAs and comparison of the nucleotide sequence of the coding region in Wernicke-Korsakoff and non-Wernicke-Korsakoff individuals. *J. Biol. Chem.* 268: 1397-1404.
2. Coy, J.F., et al. 1996. Molecular cloning of tissue-specific transcripts of a Transketolase-related gene: implications for the evolution of new vertebrate genes. *Genomics* 32: 309-316.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 300044. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Coy, J.F., et al. 2005. Mutations in the Transketolase-like gene TKTL1: clinical implications for neurodegenerative diseases, diabetes and cancer. *Clin. Lab.* 51: 257-273.
5. Langbein, S., et al. 2006. Expression of Transketolase TKTL1 predicts colon and urothelial cancer patient survival: Warburg effect reinterpreted. *Br. J. Cancer* 94: 578-585.
6. Staiger, W.I., et al. 2006. Expression of the mutated Transketolase TKTL1, a molecular marker in gastric cancer. *Oncol. Rep.* 16: 657-661.

CHROMOSOMAL LOCATION

Genetic locus: Tktl1 (mouse) mapping to X A7.3.

SOURCE

TKTL1 (M-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of TKTL1 of mouse 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-131803 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

TKTL1 (M-14) is recommended for detection of TKTL1 of mouse and rat 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); non cross-reactive with family member TKTL2.

Suitable for use as control antibody for TKTL1 siRNA (m): sc-154288, TKTL1 shRNA Plasmid (m): sc-154288-SH and TKTL1 shRNA (m) Lentiviral Particles: sc-154288-V.

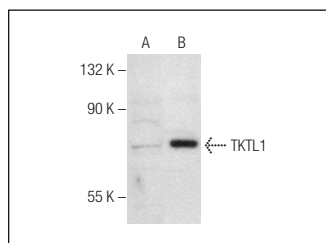
Molecular Weight of TKTL1: 65 kDa.

Positive Controls: TKTL1 (h): 293T Lysate: sc-129951.

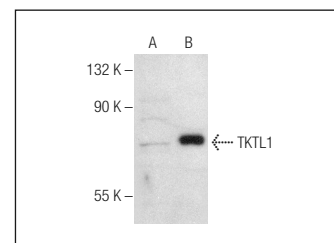
RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



TKTL1 (M-14): sc-131803. Western blot analysis of TKTL1 expression in non-transfected: sc-117752 (A) and human TKTL1 transfected: sc-129951 (B) 293T whole cell lysates.



TKTL1 (M-14): sc-131803. Western blot analysis of TKTL1 expression in non-transfected: sc-117752 (A) and human TKTL1 transfected: sc-129950 (B) 293T whole cell lysates.

STORAGE

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

MONOS
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Try **TKTL1/2 (E-8): sc-514513**, our highly recommended monoclonal alternative to TKTL1 (M-14).