SANTA CRUZ BIOTECHNOLOGY, INC.

GAPDH (h2): 293T Lysate: sc-113612

BACKGROUND

Glyceraldehyde-3-phosphate dehydrogenase (GAPDH), also called uracil DNA glycosylase, catalyzes the reversible oxidative phosphorylation of glyceraldehyde-3-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD), an important energy-yielding step in carbohydrate metabolism. While GAPDH has long been recognized as playing an integral role in glycolysis, additional functions of GAPDH include acting as an uricil DNA glycosylase, activating transcription, binding RNA and involvement in nuclear RNA export, DNA replication and DNA repair. Expression of GAPDH is upregulated in liver, lung and prostate cancers. GAPDH translocates to the nucleus during apoptosis. GAPDH complexes with neuronal proteins implicated in human neurodegenerative disorders including the β-Amyloid precursor, Huntingtin and other triplet repeat neuronal disorder proteins.

REFERENCES

1. Meyer-Siegler, K., et al. 1991. A human nuclear uracil DNA glycosylase is the 37-kDa subunit of glyceraldehyde-3-phosphate dehydrogenase. Proc. Natl. Acad. Sci. USA 88: 8460-8464.
2. Rondinelli, R.H., et al. 1997. Increased glyceraldehyde-3-phosphate dehydrogenase gene expression in late pathological stage human prostate cancer. Prostate Cancer Prostatic Dis. 1: 66-72.
3. Eyschen, J., et al. 1999. Engineered glycolytic glyceraldehyde-3-phosphate dehydrogenase binds the anti conformation of NAD^+ nicotinamide but does not experience A-specific hydride transfer. Arch. Biochem. Biophys. 364: 219-227.
4. Sirover, M.A. 1999. New insights into an old protein: the functional diversity of mammalian glyceraldehyde-3-phosphate dehydrogenase. Biochim. Biophys. Acta 1432: 159-184.
5. Berry, M.D., et al. 2000. Glyceraldehyde-3-phosphate dehydrogenase and apoptosis. J. Neurosci. Res. 60: 150-154.
6. Tatton, W.G., et al. 2000. Glyceraldehyde-3-phosphate dehydrogenase in neurodegeneration and apoptosis signaling. J. Neural Transm. Suppl. 60: 77-100.
7. Tarbe, N., et al. 2001. Transcriptional profiling of cell lines derived from an orthotopic pancreatic tumor model reveals metastasis-associated genes. Anticancer Res. 21: 3221-3228.
8. Mazzola, J.L., et al. 2002. Alteration of intracellular structure and function of glyceraldehyde-3-phosphate dehydrogenase: a common phenotype of neurodegenerative disorders? Neurotoxicology 23: 603-609.

CHROMOSOMAL LOCATION

Genetic locus: GAPDH (human) mapping to 12p13.31.

PRODUCT

GAPDH (h2): 293T Lysate represents a lysate of human GAPDH transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

RESEARCH USE

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

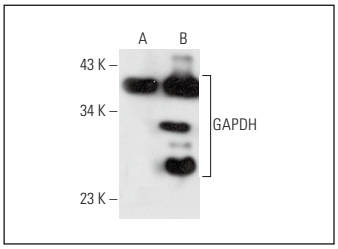
APPLICATIONS

GAPDH (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive GAPDH antibodies. Recommended use: 10-20 µl per lane.

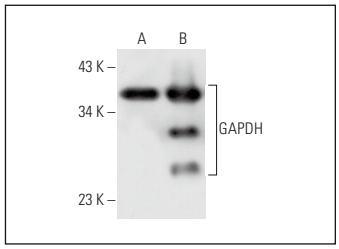
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-tranfected 293T cells.

GAPDH (1D4): sc-59540 is recommended as a positive control antibody for Western Blot analysis of enhanced human GAPDH expression in GAPDH transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



GAPDH (1D4): sc-59540. Western blot analysis of GAPDH expression in non-transfected: sc-117752 (**A**) and human GAPDH transfected: sc-113612 (**B**) 293T whole cell lysates.



GAPDH (9B3): sc-66163. Western blot analysis of GAPDH expression in non-transfected: sc-117752 (**A**) and human GAPDH transfected: sc-113612 (**B**) 293T whole cell lysates.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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