

GAPDH (m18): 293T Lysate: sc-120412

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 uracil 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 pre-cursor, 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 GAPDH. *Proc. Natl. Acad. Sci. USA* 88: 8460-8464.
2. Rondinelli, R.H., et al. 1997. Increased GAPDH gene expression in late pathological stage human prostate cancer. *Prostate Cancer Prostatic Dis.* 2: 66-72.
3. Eyschen, J., et al. 1999. Engineered glycolytic GAPDH 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 GAPDH. *Biochim. Biophys. Acta* 1432: 159-184.
5. Berry, M.D., et al. 2000. GAPDH and apoptosis. *J. Neurosci. Res.* 60: 150-154.
6. Tatton, W.G., et al. 2000. GAPDH 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.* 5: 3221-3228.
8. Mazzola, J.L., et al. 2002. Alteration of intracellular structure and function of GAPDH: a common phenotype of neurodegenerative disorders? *Neurotoxicology* 23: 603-609.

CHROMOSOMAL LOCATION

Genetic locus: *Gapdh* (mouse) mapping to 6 F3.

PRODUCT

GAPDH (m18): 293T Lysate represents a lysate of mouse GAPDH transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

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.

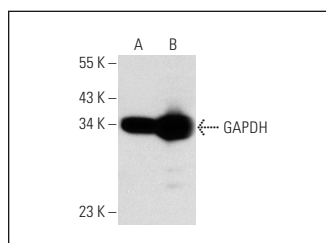
APPLICATIONS

GAPDH (m18): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive GAPDH antibodies. Recommended use: 10-20 μ l per lane.

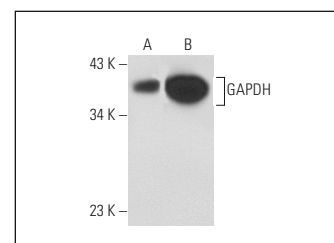
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

GAPDH (6C5): sc-32233 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse GAPDH expression in GAPDH transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



GAPDH (6C5): sc-32233. Western blot analysis of GAPDH expression in non-transfected: sc-117752 (A) and mouse GAPDH transfected: sc-120412 (B) 293T whole cell lysates.



GAPDH (H-12): sc-166574. Western blot analysis of GAPDH expression in non-transfected: sc-117752 (A) and mouse GAPDH transfected: sc-120412 (B) 293T whole cell lysates.

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.