



Qty: 100 µg/200 µL

Mouse anti-GAPDH

Catalog No.: 437000

Mouse anti-GAPDH

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 258

Isotype: IgG1

IMMUNOGEN

Recombinant protein derived from the C-terminus region of human GAPDH protein (accession # P04406, NP_002037), which is 98% homologous with orangutan, pig and sheep, 96% with bovine and 95% with cat and horse.

SPECIFICITY

This antibody is specific for human GAPDH (G3P_human, Glyceraldehyde-3-phosphate dehydrogenase) protein. On Western blots of human HeLa cell lysates, it identifies the target band at ~37 kDa.

REACTIVITY

Reactivity has been confirmed with human HeLa, A431 and HEK 293 cell lysates using Western blotting. The reactivity has also been confirmed with human HeLa cells using immunoprecipitation and immunofluorescence. Based on amino acid sequence homology, reactivity with orangutan, pig, sheep, bovine, cat, and horse, is also expected.

Sample	Western Blotting	Immunofluorescence	Immunoprecipitation
Human	+++	+++	+++
Orangutan	ND	ND	ND
Pig	ND	ND	ND
Sheep	ND	ND	ND
Bovine	ND	ND	ND
Cat	ND	ND	ND
Horse	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL

Immunofluorescence: 2 µg/mL

Immunoprecipitation: 5 µg/IP reaction

(cont')

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PI437000

(Rev 10/08) DCC-08-1089

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STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

GAPDH (glyceraldehyde-3-phosphate dehydrogenase) is one of the key enzymes involved in glycolysis. It catalyzes an important energy-yielding step in carbohydrate metabolism, the reversible oxidative phosphorylation of glyceraldehyde-3-phosphate in the presence of inorganic phosphate and nicotinamide adenine dinucleotide (NAD).¹ The enzyme exists as a tetramer of identical chains. Besides functioning as a glycolytic enzyme in cytoplasm, recent evidence suggests that mammalian GAPDH is also involved in a great number of intracellular processes such as membrane fusion, microtubule bundling, phosphotransferase activity, nuclear RNA export, DNA replication, and DNA repair.² Since it is constitutively and stably expressed in almost all tissues at high level, GAPDH became a well-established "house-keeping" protein and is widely used as a loading control for protein normalization.³

GAPDH has been implicated in prostate cancer progression, programmed neuronal cell death, and age-related neuronal diseases such as Huntington and Alzheimer diseases.⁴ GAPDH could be therefore a target for therapeutic approaches. It has also been demonstrated that some physiological factors such as diabetes and hypoxia can decrease GAPDH expression in certain cell types such as human glioblastoma cells.⁵

REFERENCES

1. Allen RW et al. *J Biol Chem* 262(2):649-53, 1987.
2. Meyer-Siegler K et al. *Acta Biochim Biophys Sin (Shanghai)* 39(11):885-90, 2007.
3. Tokunaga K et al. *Cancer Res* 47(21):5616-9, 1987.
4. Newman SF et al. *J Neurosci Res* 85(7):1506-14, 2007.
5. Said HM et al. *BMC Mol Biol* 8:55, 2007.

RELATED PRODUCTS

Product	Conjugate	Cat. No.
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	Goat anti-rabbit IgG (H+L)	Goat anti-mouse IgG (H+L)	Ex/Em*	Fluorescence similar to--
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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