

Monoclonal Antibody to GAPDH - Loading Control



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Monoclonal Antibody to GAPDH - Loading Control

Catalog No : IMG-5019A-2
Formulation : 100 ul antibody solution containing 50% glycerol, 0.01% thimerosal and 1.0 mg/ml BSA.
Isotype : Mouse-IgG1
Clone : GAPDH 1D4
Species React : Bovine, Chicken, Human, Mouse, Pig, Rabbit, Rat
Host : Mouse

Application
Western blot analysis: 1:1000-1:5000
IF/ICC: 1:100-1:1000
IP: see Kang et al
Storage
Store at -20 degrees C. Avoid multiple freeze/thaw cycles.

Recommended Positive Control: HeLa, Jurkat, Daudi, 293, Rh30, A375m T98Gm HCT-116, Hep-2, ovary, stomach, lung, liver, heart. Most cell lines and tissues will be positive for GAPDH.

Background

Glyceraldehyde 3-Phosphate Dehydrogenase (GAPDH, G3PDH or GPDH) is one of the key enzymes involved in glycolysis; it catalyzes the reversible oxidative phosphorylation of glyceraldehydes-3-phosphate. The GAPDH gene is constitutively and stably expressed at high levels in almost all tissues and cells, and as such is considered to be a housekeeping gene. Housekeeping proteins like GAPDH are useful as loading controls for western blots and protein normalization. They are also useful for visualizing cells in microscopy assays.

Antigen

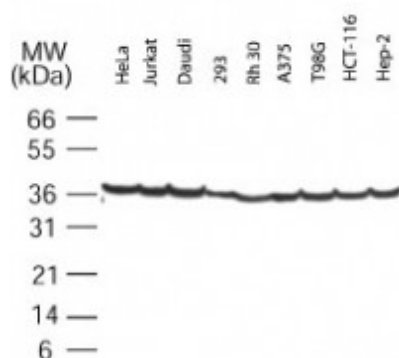
Purified pig GAPDH enzyme.

Application Notes

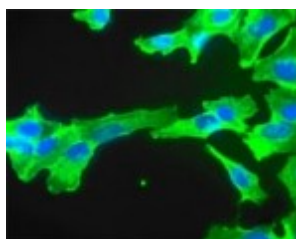
On Western blots, GAPDH is detected as a band of approximately 36-40 kDa. GAPDH antibodies are widely used as loading controls for quantitative Western blotting, including normalizing Western blot results to GAPDH. Species reactivity: GAPDH is highly conserved across species, and antibodies to GAPDH typically have broad species reactivity. Clone 1D4 has been shown to react with human, cow, pig, mouse, rat, and chicken GAPDH. Since GAPDH is highly conserved across species, it is likely that the antibody reacts with additional species.

Genebank Info (Protein)

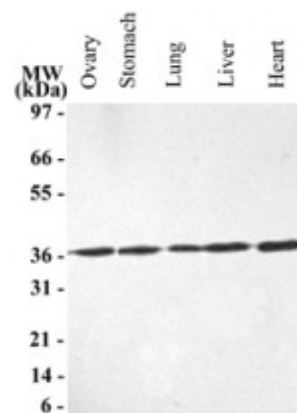
NP_002037



Application of the GAPDH antibody as a protein loading control in Western blots. Total proteins from various human cell lysates were normalized using the GAPDH monoclonal antibody. The blot shown is IMGENEX's INSTA-Blot: Human Cell Lines, Cat. no. IMB-105.



Application of the GAPDH antibody to visualize cells by fluorescence microscopy. Sh-SY5Y human neuroblastoma cells were stained with GAPDH, followed by an FITC labeled second step antibody (green) and counterstained with Hoechst dye (blue).



Application of the GAPDH antibody as a protein loading control in Western blots. Total proteins from various rat tissue lysates were normalized using the GAPDH monoclonal antibody. Rat tissue lysates, Cat nos: Ovary (40151), Stomach (40130), Lung (40126), Liver (40125), and Heart (40122).

Related Products

- 20101 [Goat Anti-Mouse Ig HRP Conjugate]
- 40161 [HeLa cell line lysate (cervical carcinoma)]
- 40163 [Daudi cell line lysate (lymphoma, Burkitt)]
- 40164 [HEK293 cell line lysate (embryonic kidney)]
- 40166 [Rh30 cell line lysate (rhabdomyosarcoma)]

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6. 40151 [Human Ovary Tissue lysate]
7. 40152 [Human Stomach Tissue lysate]
8. 40146 [Human Lung Tissue lysate]
9. 40145 [Human Liver Tissue lysate]
10. 40142 [Human Heart Tissue lysate]
11. IMG-6166K [Western Blot Loading Control Sampler Kit]

Reference

Product Citations

1. **Increased susceptibility to transcriptional changes with novel stressor in adrenal medulla of rats exposed to prolonged cold stress.** Xiaoping Liua, Richard Kvetnanskyb, Lidia Serovaa, Anne Sollasa and Esther L. Sabbana. *Molecular Brain Research*, doi:10.1016/j.molbrainres.2005.07.019 On line publication.
2. **Dimethyl Sulfoxide Has an Impact on Epigenetic Profile in Mouse Embryoid Body.** Misa Iwatani, Kohta Ikegami, Yuliya Kremenska, Naka Hattori, Satoshi Tanaka, Shintaro Yagi, and Kunio Shiota. *Stem Cells*, 24: 2549-2556 (2006).
3. **Allelic Variation in the Hepatitis C Virus NS4B Protein Dramatically Influences RNA Replication.** K J. Blight, *J. Virology.*, DOI:10.1128/JVI.02481-06 (2007). **Imgenex antibodies cited: 1. GAPDH (IMG-5019A-1, IMG-5019A-2) [WB, Fig7, Fig8 (Huh-7.5 human hepatoma cell line)].**
4. **Membrane localization and pH-dependent transport of a newly cloned organic cation transporter (PMAT) in kidney cells.** L Xia, K Engel M Zhou, and J Wang. *Am J Physiol Renal Physiol* 292:682-690 (2007). **Imgenex Products cited: 1. INSTA-Blot Human Tissue: ready-to-use WB (IMB-103); 2. GAPDH (IMG-5019A-1/IMG-5019A-2). [WB: Fig 2, human kidney tissue]**
5. **Cdc42-interacting protein-4 functionally links actin and microtubule networks at the cytolytic NK cell immunological synapse.** Banerjee P., R. Pandey, R. Zheng, M. Suhoski, L. Monaco-Shawver, J. Orange. *J. Exp. Med.* 10.1084/jem.20061893 (2007). **WB (Fig 8A): Protein standardization for siRNA studies**
6. **Cardiomyocyte apoptosis in autoimmune cardiomyopathy: mediated via endoplasmic reticulum stress and eggerated by norepinephrine.** Mao W, S fukuoka, C Iwai, J Liu, VK Sharma, S-S Sheu, M Fu, and C-s Liang. *Am J Heart Circ Physiol* 293:H1636-H1645 (2007). **Imgenex antibodies cited:**
 1. **ATF6 (IMG-273): WB (Fig 7), analysis of ATF6 in nuclear fraction of rabbit left ventricle myocardium tissue lysates, Authors describe cleaved forms of p90ATF6 in the nucleus: p60ATF6 and p36ATF6.**
 2. **GAPDH (IMG-5019A): WB (Fig 4), GAPDH antibody used as a loading control in rabbit left ventricle myocardium tissue lysates.**
7. **Metformin transport by a newly cloned proton-stimulated organic transporter (Plasma membrane monoamine transporter) expressed in human intestine.** Zhou M, L. Xia, J Wang *Drug Metabolism and Disposition* DOI:10.1124/dmd.107.01549 (2007). **Imgenex products cited for WB (human small intestine, Fig 6B):**
 1. **GAPDH (IMG-5019A-1, -2)**
 2. **INSTA-BLOT containing human small intestine tissue lysate (IMB-103, IMB-123)**
8. **Estrogen effects on Skeletal muscle insulin-like growth factor-1 and myostatin in ovariectomized rats.** Zhou M, L Xia, J Wang. *Experimental Biology and Medicine* 232:1314-1325 (2007). **WB (used as a gel loading control for rat muscle tissue lysates): Figs 6C, 7C, 8C.**
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10. **Cathepsin B mRNA and protein expression following contusion spinal cord injury in rats.** Ellis R, J Earnhardt, R Hayes, K Wang, D Anderson. *J Neurochem* 88: 689-697 (2004). **WB: GAPDH used as a protein loading control (rat spinal cord tissue), Fig. 3a,b,c.**
11. **The extensive nitration of neurofilament light chain in the hippocampus is associated with the cognitive impairment induced by amyloid in mice.** Alkam T, A Nitta, H Mizoguchi, A Itoh, R Murai, T Nagai, K Yamada, T Nabeshima. *JPET* 327: 137-147 (2008). **WB (mouse hippocampal lysates), Fig. 7A.**
12. **RNAi-mediated silencing of nuclear factor erythroid-2-related factor 2 gene expression in non-small cell lung cancer inhibits tumor growth and increases efficacy of chemotherapy.** Singh A, S Boldin-Adamsky, R Thimmulappa, S Rath, H Ashush, J Coulter, A Blackford, S Goodman, F Bunz, W Watson, E Gabrielson, E Feinstein, S Biswal. *Cancer Research* 68: 7975-7984 (2008). **WB (human A549 and H460 cells), Fig. 1.**
13. **Transcriptional restriction of HIV-1 gene expression in undifferentiated primary monocytes.** Dong C, C Kwas, L Wu. *Journal of Virology* doi:1128/JVI.02665-08 (2009). **WB (human monocytes), Figs. 5A,C; 7A.**
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