GAPDH Protein, Mouse (His)

Cat. No.:	HY-P74129
Synonyms:	Glyceraldehyde-3-phosphate dehydrogenase; GAPDH; Gapd
Species:	Mouse
Source:	E. coli
Accession:	P16858 (M1-E333)
Gene ID:	14433
Molecular Weight:	Approximately 38 kDa

PROPERTIES

AA Sequence	M V K V G V N G F G R I G R L V T R A A I C S G K V E I V A I N D P F I D L N Y M V Y M F Q Y D S T H G K F N G T V K A E N G K L V I N G K P I T I F Q E R D P T N I K W G E A G A E Y V V E S T G V F T T M E K A G A H L K G G A K R V I I S A P S A D A P M F V M G V N H E K Y D N S L K I V S N A S C T T N C L A P L A K V I H D N F G I V E G L M T T V H A I T A T Q K T V D G P S G K L W R D G R G A A Q N I I P A S T G A A K A V G K V I P E L N G K L T G M A F R V P T P N V S V V D L T C R L E K P A K Y D D I K K V V K Q A S E G P L K G I L G Y T E D Q V V S C D F N S N S H S S T F D A G A G I A L N D N F V K L I S W Y D N E Y G Y S N R V V D L M A Y M A S K E
Biological Activity	The specific activity of GAPDH was determined to be 947.65 U/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	GAPDH protein showcases a dual functionality with both glyceraldehyde-3-phosphate dehydrogenase and nitrosylase

activities, playing integral roles in glycolysis and nuclear functions, respectively. In glycolysis, it serves as a key enzyme catalyzing the initial step by converting D-glyceraldehyde 3-phosphate (G3P) into 3-phospho-D-glyceroyl phosphate. Beyond its metabolic role, GAPDH modulates the organization and assembly of the cytoskeleton and facilitates CHP1-dependent microtubule and membrane associations by stimulating the binding of CHP1 to microtubules (By similarity). It is also a component of the GAIT complex, which mediates interferon-gamma-induced transcript-selective translation inhibition in inflammation processes. In innate immunity, GAPDH contributes to TNF-induced NF-kappa-B activation and type I interferon production by interacting with TRAF2 and TRAF3, respectively (By similarity). Furthermore, its involvement in nuclear events, including transcription, RNA transport, DNA replication, and apoptosis, is likely mediated by its nitrosylase activity, leading to cysteine S-nitrosylation of nuclear target proteins such as SIRT1, HDAC2, and PRKDC (By similarity). The multifaceted functions of GAPDH underscore its versatile and critical roles in cellular processes.

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