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Datasheet for 100-4158

Glutamate Dehydrogenase Antibody

Overview

Description:	Anti-Glutamate Dehydrogenase (Bovine Liver) (RABBIT) Antibody - 100-4158
Item No.:	100-4158
Size:	2 mL
Applications:	WB, Other
Reactivity:	Bovine
Host Species:	Rabbit

Product Details

Background:	Glutamate is a major excitatory neurotransmitter. One enzyme central to the metabolism of glutamate is glutamate dehydrogenase (GDH1; EC 1.4.1.3), that catalyzes the reversible deamination of L-glutamate to 2-oxoglutarate using NAD+ or NADP+. Mammalian GDH is composed of six identical subunits, and the regulation of GDH is very complex. It has been a major goal to identify the substrate and regulatory binding sites of GDH. It is only in recent years that the three-dimensional structure of GDH from microorganisms is available. Very recently, crystallization of bovine liver GDH was reported for the first time from the mammalian sources. However, remarkably little is known about the detailed structure of mammalian GDH, especially the brain enzymes.
Synonyms:	rabbit anti-Glutamate Dehydrogenase Antibody, Glutamate dehydrogenase 1 mitochondrial, GDH 1
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	Antiserum

Target Details

Gene Name:	GLUD1
Reactivity:	Bovine
Immunogen Type:	Native Protein

Immunogen:	This antibody was prepared from whole rabbit serum produced by repeated immunizations with a full length Glutamate Dehydrogenase protein isolated from Bovine Liver.
Purity/Specificity:	This product was prepared from monospecific antiserum by a delipidation and defibrination. Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-rabbit serum, purified and partially purified Glutamate Dehydrogenase [Bovine Liver]. BLAST analysis was used to determine that cross reactivity is suggested for both mitochondrial and brain isoforms (GDH1 and GDH2), from both bovine and human sources. Additionally similar reactivity is suggested for most primate species including green monkey, white gibbon, chimpanzee orangutan, and gorilla. A high degree of sequence homology is also noted for GDH from chicken, mouse, rat, dog, and other mammals as well as Xenopus tropicalis, zebrafish, rainbow trout and Atlantic salmon. Cross reactivity against Glutamate Dehydrogenase from other tissues and species may occur but have not been specifically determined.
Relevant Links:	• UniProtKB - P00366 • NCBI - 32880221 • GeneID - 281785

Application Details

Tested Applications:	WB
Suggested Applications:	Other (Based on references)
Application Note:	This antibody has been tested by western blot. Specific conditions for reactivity should be optimized by the end user. Bovine glutamate dehydrogenase exists as a homohexamer located within the mitochondrial matrix. Expect a band approximately 56 kDa in size corresponding to glutamate dehydrogenase monomer subunit by western blotting in the appropriate cell or tissue extract. Anti-Glutamate Dehydrogenase Antibody is suitable for use in ELISA.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:4,000 - 1:16,000
IP:	1:100
WB:	1:1,000 - 1:3,000

Formulation

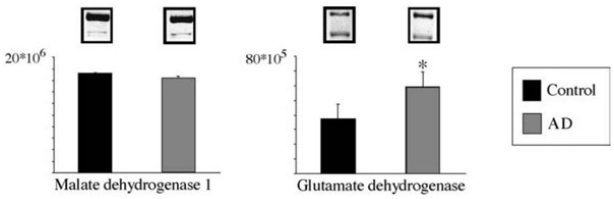
Physical State:	Lyophilized
Concentration:	85 mg/mL by Refractometry
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide

Stabilizer:	None
Reconstitution Volume:	2.0 mL
Reconstitution Buffer:	Restore with deionized water (or equivalent)

Shipping & Handling

Shipping Condition:	Ambient
Storage Condition:	Store vial at 4° C prior to restoration. For extended storage aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Centrifuge product if not completely clear after standing at room temperature. This product is stable for several weeks at 4° C as an undiluted liquid. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

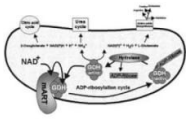
Images



Western Blot
Western Blot using Anti-Glutamate Dehydrogenase (Bovine Liver) (RABBIT) Antibody.
Two different molecular weight groups of isoforms were detected for MDH1 at about 36 kDa using Anti-MDH1 (pig heart) 100-601-145 at 1:1500, Fluorescent Cy-5 labelled secondary at 1:500 and for GDH at about 60 kDa using Anti-GDH (bovine liver) 100-4158 at 1:1500, anti-rabbit secondary at 1:500. Light intensities revealed unchanged amount of total soluble MDH1 but increased amount of total soluble GDH in AD when compared to controls. Values of light intensities are given as mean ± S.E.M. *p ≤ 0.05. Fig. 6.
PMID: 16298240.

Western Blot
Western blot analysis is shown using Rockland's anti-bovine glutamate dehydrogenase antibody to detect the enzyme from bovine liver preparations. Comparison to a molecular weight marker indicates a predominant band of ~62 kDa. The higher molecular weight band may represent a subunit dimer. A 4-20% gradient gel was used to separate proteins prior to transfer to 0.2 µm nitrocellulose. The blot was incubated with a 1:1,000 dilution of the antibody for 2 h at room temperature followed by detection using IRDye™800 labeled Goat-a-Rabbit IgG [H&L] (611-132-122) diluted 1:5,000 for 45 min at room temperature. IRDye™800 fluorescence image was captured using the Odyssey® Infrared Imaging System developed by LI-COR. IRDye is a trademark of LI-COR, Inc. Other detection systems will yield similar results.

Diagram
Metabolic pathways that may be affected by the inhibition of GDH are indicated. mART, mitochondrial ADP-ribosyl transferase.



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