Datasheet for 200-401-051

Catalase Antibody

Overview

Description:	Anti-Catalase (Bovine Liver) (RABBIT) Antibody - 200-401-051
Item No.:	200-401-051
Size:	100 µg
Applications:	IHC, WB
Reactivity:	Human, Mouse, Rat, Bovine, Sheep
Host Species:	Rabbit

Product Details

Background:	Anti-Catalase Antibody detects catalase. Catalase is a common enzyme found in nearly all living organisms exposed to oxygen. It catalyzes the decomposition of hydrogen peroxide to water and oxygen. Catalase is necessary in cells to protect them from the toxic effects of hydrogen peroxide and to promote growth of cells. Anti-Catalase antibody is ideal for investigators involved in Cell Signaling, Neuroscience and Signal Transduction research.
Synonyms:	rabbit anti-Catalase Antibody, Cas 1 antibody, CAT antibody, Cs1 antibody, MGC138422 antibody, MGC138424 antibody
Host Species:	Rabbit
Clonality:	Polyclonal
Format:	IgG

Target Details

Gene Name:	CAT
Reactivity:	Human, Mouse, Rat, Bovine, Sheep
Immunogen Type:	Native Protein
Immunogen:	Anti-Catalase Antibody was produced by repeated immunizations with bovine liver catalase protein.

Purity/Specificity:	Anti-Catalase Antibody is an IgG fraction antibody purified from monospecific antiserum by a multi-step process which includes delipidation, salt fractionation and ion exchange chromatography followed by extensive dialysis against the buffer stated above. Assay by immunoelectrophoresis resulted in a single precipitin arc against anti-Rabbit Serum as well as purified and partially purified Catalase [Bovine liver]. Cross reactivity against Catalase from other tissues and species may occur but have not been specifically determined.
Relevant Links:	• UniProtKB - P00432 • 200-401-051 SDS • NCBI - AAI03067.1 • GeneID - 531682

Application Details

Tested Applications:	IHC, WB
Application Note:	Anti-Catalase is tested for use in ELISA, western blot, and immunohistochemistry. Specific conditions for reactivity should be optimized by the end user.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
ELISA:	1:20,000
IHC:	User Optimized
WB:	1:10,000 - 1:50,000

Formulation

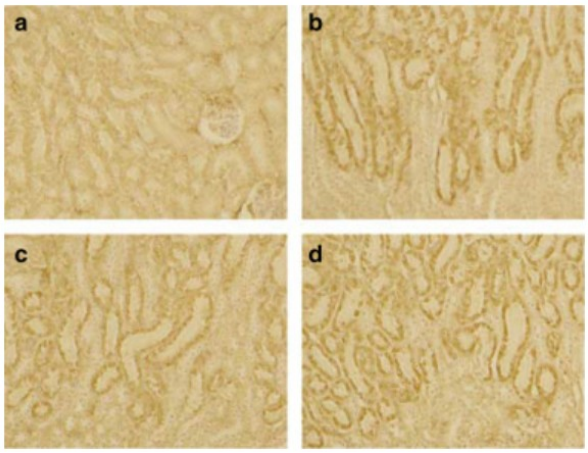
Physical State:	Liquid (sterile filtered)
Concentration:	1.0 mg/mL by UV absorbance at 280 nm
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide
Stabilizer:	None

Shipping & Handling

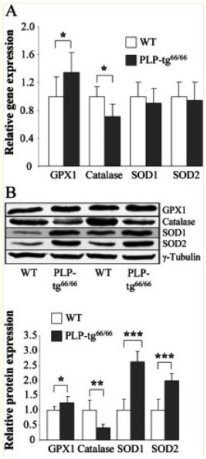
Shipping Condition:	Dry Ice

Storage Condition:	Store Catalase Antibody at -20° C prior to opening. Aliquot contents and freeze at -20° C or below for extended storage. Avoid cycles of freezing and thawing. Centrifuge antibody 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.

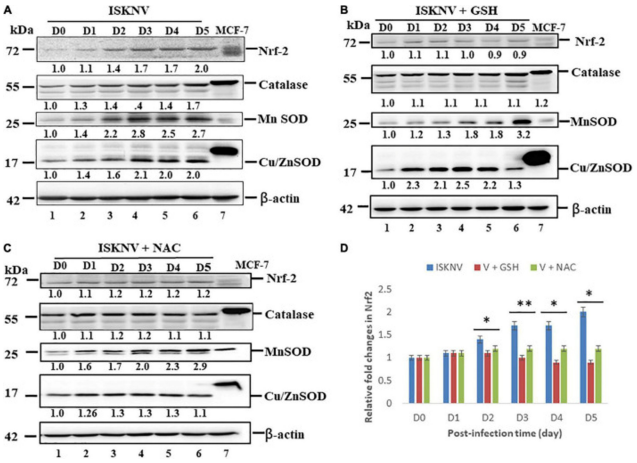
Images



Immunohistochemistry
Immunohistochemical staining of catalase and ED-catalase in mouse kidneys (× 100 original magnification). Catalase or ED-conjugated catalase was injected into the tail vein of mice at a dose of 1 mg kg−1. At 30 min after injection, the kidneys were excised and paraffin-embedded sections were immunostained for bovine catalase using biotin-conjugated anti-bovine catalase antibody, followed by incubation with peroxidase-conjugated antibody. (a) Untreated, (b) high-dose catalase (100 mg kg−1), (c) catalase, and (d) ED-catalase.
Figure 1 PMID: 17898699

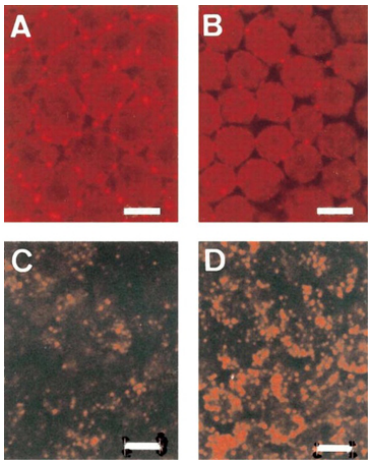


Western Blot
Antioxidant defense is altered in spinal cords from 6-week-old PLP-tg66/66 mice. Antioxidant enzyme RNA (A) and protein (B) levels were determined in spinal cords from 6-week-old WT and PLP-tg66/66mice (n = 7/genotype). RNA was quantified by TaqMan real time PCR. Relative protein level is expressed as a percentage of control and referred to γ-tubulin as loading marker. Glutathione reductase activity is expressed as units/mg tissue. Values are expressed as the mean ± SD. Student's t-test was used for statistical analysis; *P < 0.05, **P < 0.01, ***P < 0.001.
Fig 6. PMID: 29027761



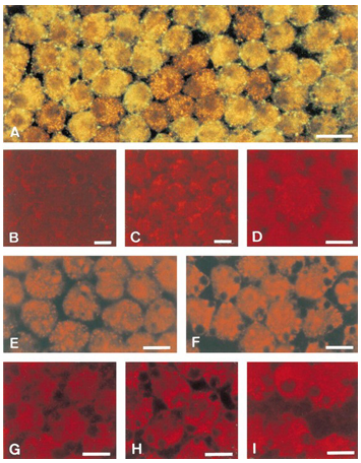
Western Blot

Infectious spleen and kidney necrosis virus (ISKNV) infection can induce Nrf2 and antioxidant enzyme expression in GF-1 cells. (A–C) Infection of fish cells with ISKNV from day 0 to day 5, showing ISKNV-infected cells (A), GSH-treated and virus-infected cells (B), and NAC-treated and virus-infected cells (C), with the stress transcriptional factor Nrf2 and the antioxidant enzyme catalases Cu/MnSOD and ZnSOD, as determined by western blot analyses. Lanes 1–6 correspond to ISKNV-infected fish cells from day 0 to day 5, while lane 7 shows the MCF7 cell lysate. Membranes were probed with anti-mouse Nrf2, catalase, Cu/MnSOD, and ZnSOD monoclonal antibodies (1:7,500) and an anti-mouse β-actin monoclonal antibody (1:12,500). (D) Quantification of protein and Nrf2 expression levels (N = 3) using the Image J software, from panels (A–C). All data were analyzed using either paired or unpaired Student's t-tests, as appropriate. *P < 0.01 and **P < 0.05.
FIGURE 3.
PMID: 36304944

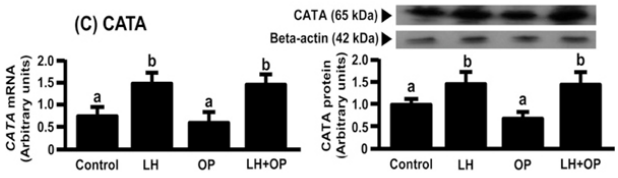


Immunofluorescence Microscopy

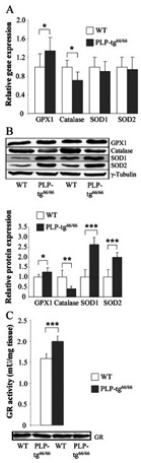
Vegetative pole of uncultured granulosa explants. (A) α-Connexin-43 immunostaining of F1; most cells have gap junctions. (B) α-connexin-43 immunostaining of F3; few cells with gap junctions. (C) α-Catalase immunostaining of F1; weak catalase immunofluorescence signal. (D) α-Catalase immunostaining of F3; strong catalase immunofluorescence signal. Bars = 10 µm. Fig 5. PMID: 10639483



Immunofluorescence Microscopy
α-Catalase immunostaining (red label) (A) Double staining with α-connexin-43 (green label) of the F1 vegetative pole. Cells with strongly stained peroxisomes show absence of gap junctions, whereas cells with low catalase staining show many gap junctions. (B) F1 transition zone 24-hr cultured while attached to the animal pole; weak catalase signal. (C) F1 transition zone 24-hr cultured in absence of the animal pole; increase in catalase signal is observed. (D) Transition zone (uncultured); large isolated cell with strong catalase signal. (E) Uncultured F1 granulosa showing randomly dispersed granules. (F) F1 granulosa after 24-hr culturing, showing accumulation of peroxisomes in the vicinity of lipid droplets (seen as black holes at the periphery of the cells). (G) F1 granulosa 24-hr cultured without gap junction blocking agents. (H) F1 granulosa 24-hr cultured in presence of AGA (200 µM); stronger α-catalase signal in comparison with G. (I) F1 granulosa 24-hr cultured in presence of octanol (250 µM); stronger α-catalase signal in comparison with G. Bars = 10 µm. Fig 6. PMID: 10639483

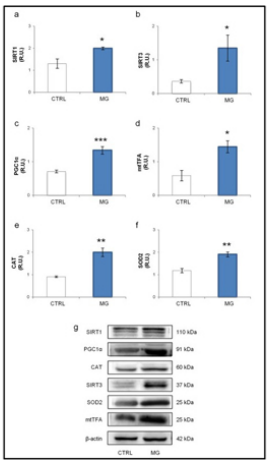


Western Blot
Effects of LH and/or OP on the amounts (C) CATA expressions. The cells were treated with LH (10 ng/ml) alone or in combination with OP (100 µM) for 24 h. mRNA data are the mean ± SEM of four separate experiments each performed in duplicate and are expressed relative to the amount of GAPDH mRNA. Protein data are the mean ± SEM of four experiments each performed with separate cell preparations and are expressed relative to the amount of beta-actin protein. Different letters indicate significant differences ($P<0.05$), as determined by ANOVA followed by a Fisher's PLSD as a multiple comparison test. Fig 1. PMID: 23386101



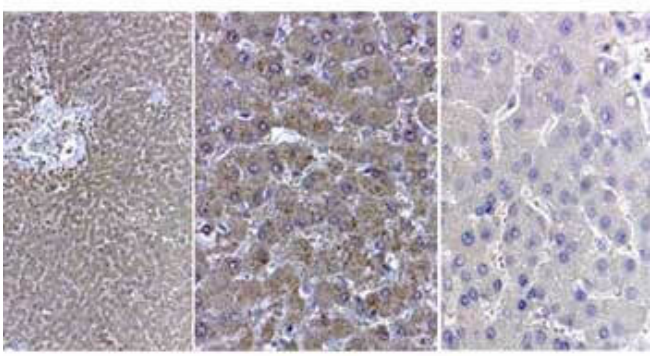
Western Blot

Antioxidant defense is altered in spinal cords from 6-week-old PLP-tg66/66 mice. Antioxidant enzyme RNA (A) and protein (B) levels and GR activity (C) were determined in spinal cords from 6-week-old WT and PLP-tg66/66mice (n = 7/genotype). RNA was quantified by TaqMan real time PCR. Relative protein level is expressed as a percentage of control, and referred to γ-tubulin as loading marker. Glutathione reductase activity is expressed as units/mg tissue. Values are expressed as the mean ± SD. Student's t-test was used for statistical analysis; *P < 0.05, **P < 0.01, ***P < 0.001. Fig 6. PMID: 29027761



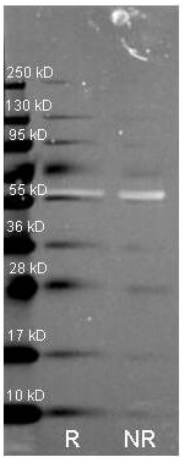
Western Blot

MG intake increases ovarian expression of SIRT1 and proteins of SIRT1 network. Western blot analysis of SIRT1 (a), SIRT3 (b), PGC1α (c), mtTFA (d), CAT (e) and SOD2 (f) and representative images of immunoreactive bands (g) are shown. Data are presented as means ± SEM of densitometric analysis of immunoreactive bands normalized to internal reference protein (β-actin). Three mice per experimental group were employed. Experiments were done in triplicate. ***P < 0.001, **P < 0.01, *P < 0.05, t-test. Fig 5. PMID: 30771486



Immunohistochemistry

Immunohistochemistry of Catalase antibody. Tissue: human liver. Fixation: formalin fixed paraffin embedded. Antigen retrieval: user optimized. Primary antibody: Catalase antibody 1:400. Secondary antibody: Peroxidase goat anti-rabbit at 1:10,000 for 45 min at RT. Localization: nuclear and occasionally cytoplasmic. Staining: Liver parenchyma: portal triads affected by moderate lymphoplasmacytic inflammation with minimal proliferation of bile ductules. Not obvious interstitial fibrosis. Cytoplasma of hepatocytes, diffuse positivity for the antibody anti-catalase. Neg Ctr (far right) normal rabbit IgG with Human liver. pH 6.2 40X



Western Blot
Western Blot of Rabbit anti-Catalase antibody. Lane R: Reduced samples of purified Catalase. Lane NR: Non-reduced samples of purified Catalase. Load: ~1ug of protein per lane. Primary antibody: Catalase antibody at 1:1000 for overnight at 4°C. Secondary antibody: Dylight488™ rabbit secondary antibody at 1:10,000 for 1.5 hrs at RT. Block: MB-070 overnight at 4°C. Predicted/Observed size: 59.9 kDa, 55 kDa for catalase. Other band(s): none.

References

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