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Datasheet for 200-901-D60

Glial Fibrillary Acidic Protein (GFAP) Antibody

Overview

Description:	Anti-Glial Fibrillary Acidic Protein (GFAP) (CHICKEN) Antibody - 200-901-D60
Item No.:	200-901-D60
Size:	100 µL
Applications:	IF, WB, IHC
Reactivity:	Rat
Host Species:	Chicken

Product Details

Background:	GFAP Antibody detects GFAP. Glial Fibrillary Acidic Protein (GFAP) was discovered by Amico Bignami and co-workers as a major fibrous protein of multiple sclerosis plaques. It was subsequently found to be a member of the 10nm or intermediate filament (IF) family, specifically the IF family Class III, which also includes peripherin, desmin and vimentin. GFAP is strongly and specifically expressed in astrocytes and certain other astroglia in the CNS, in satellite cells, peripheral ganglia, and in non-myelinating Schwann cells in peripheral nerves. In many damage and disease states GFAP expression is heavily upregulated in astrocytes. In addition, neural stem cells frequently strongly express GFAP. Point mutations in the protein coding region of the GFAP gene lead to Alexander disease which is characterized by the presence of abnormal astrocytes containing GFAP protein aggregates known as Rosenthal fibers. Therefore, GFAP antibody is ideal for investigators involved in neuropathologic diseases and more generally in Neuroscience.
Synonyms:	gfapl, DKFZp459C0729, MGC139638, FLJ45472, AI836096, cb345. Glial fibrillary acidic protein, GFAP antibody, neuroscience antibodies
Host Species:	Chicken
Clonality:	Polyclonal
Format:	IgY

Target Details

Gene Name:	GFAP

Reactivity:	Rat
Immunogen Type:	Recombinant Protein
Immunogen:	Anti-GFAP Antibody was produced by repeated immunizations with recombinant and extensively purified bovine GFAP.
Purity/Specificity:	Anti-GFAP Antibody is directed against bovine GFAP. The antibody is a total IgY fraction. Expect reactivity with the following species based on sequence homology: human, mouse, rat. Cross reactivity with GFAP from other species has not been determined.
Relevant Links:	• UniProtKB - Q28115 • GeneID - 281189 • UniProtKB - Q28115.2

Application Details

Tested Applications:	IF, WB
Suggested Applications:	IHC (Based on references)
Application Note:	Anti-Glial Fibrillary Acidic Protein (Chicken) antibody is tested for use in Western Blotting, ICC, and IHC. Specific conditions for reactivity should be optimized by the end user. Expect a band of approximately 50 kDa in size corresponding to the GFAP proteins in the appropriate cell lysate or extract. A lower band at ~45kDa is a proteolytic fragment derived from the GFAP molecule.
Assay Dilutions:	All assays should be optimized by the user. Recommended dilutions (if any) may be listed below.
IF:	1:1000
WB:	1:10000

Formulation

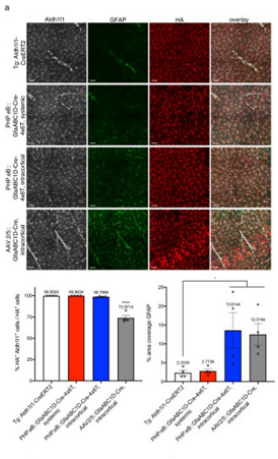
Physical State:	Liquid
Concentration:	10 mini Blots Each
Buffer:	0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2
Preservative:	0.01% (w/v) Sodium Azide

Shipping & Handling

Shipping Condition:	Dry Ice

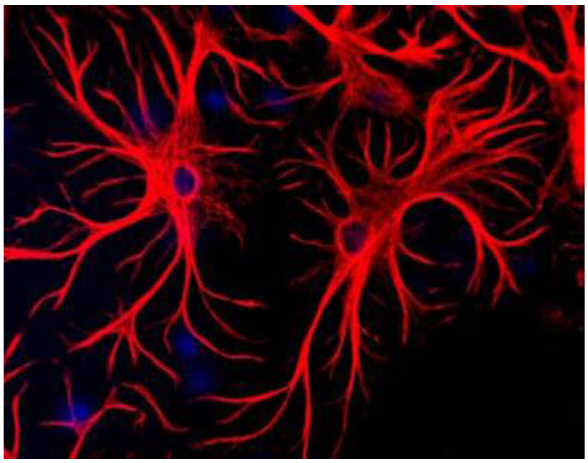
Storage Condition:	Store vial at -20° C prior to opening. This product is stable at 4° C as an undiluted liquid. For extended storage, aliquot contents and freeze at -20° C or below. Avoid cycles of freezing and thawing. Dilute only prior to immediate use.
Expiration:	Expiration date is one (1) year from date of receipt.

Images

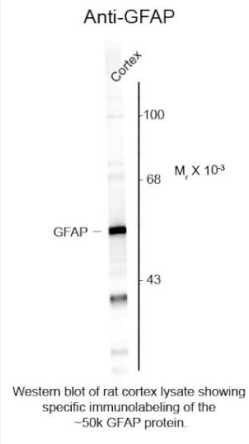


Western Blot

a). Immunohistochemical analysis of RiboTag+ cells (hemagglutinin HA+ ribosomal tag), colocalized with astrocytic marker Aldh1l1 and astrocytic reactivity marker GFAP. Astrocytic specificity is high in Aldh1l1-CreERT2 transgenic mice and systemic delivery of PHP.eB::GfaABC1D-Cre-4x6T with no overt evidence of astrocyte reactivity (GFAP% coverage). Specificity remains high with intracortical delivery of PHP.eB::GfaABC1D-Cre-4x6T and decreases with intracortical delivery of AAV2/5::GfaABC1D-Cre; this route of viral delivery shows some evidence of astrocyte reactivity by GFAP immunoreactivity. Scale bars: 50 µm. Mean ± SEM; n = 4 mice per cohort. Astrocyte specificity, HA+Aldh1l1+/HA+: one-way ANOVA, Holm–Sidak's multiple comparisons test, P < 0.0001, F = 77.01, df=15; Aldh1l1-CreERT2 vs AAV2/5::GfaABC1D-Cre ****P < 0.0001. GFAP % area coverage: Aldh1l1-CreERT2 = 2.33% coverage ± 0.64; PHP.eB::GfaABC1D-Cre-4x6T systemic, 2.77% coverage ± 0.55; PHP.eB::GfaABC1D-Cre-4x6T intracortical, 13.61% coverage ± 4.71; AAV2/5::GfaABC1D-Cre, 12.52% coverage ± 2.90; one-way ANOVA, Holm–Sidak's multiple comparisons test, P = 0.0011, F = 10.54, df=15; Aldh1l1-CreERT2 vs PHP.eB::GfaABC1D-Cre-4x6T intracortical *P = 0.0431; Aldh1l1-CreERT2 vs AAV2/5::GfaABC1D-Cre *P = 0.0481. Source data are provided as a Source Data file. Fig 5.
PMID: 37973910



Immunofluorescence Microscopy
Immunofluorescence Microscopy of Anti-Glial Fibrillary Acidic Protein (GFAP) (Chicken) Antibody. Tissue: Mixed cultures of neurons and glia. Fixation: 0.5% PFA. Antigen retrieval: not required. Primary antibody: GFAP antibody at 10 µg/mL for 1 h at RT. Secondary antibody: Fluorescein chicken secondary antibody at 1:10,000 for 45 min at RT. Localization: GFAP is cytoplasmic. Staining: chicken anti-GFAP (red), and DNA (blue). Astrocytes stain strongly and specifically in a clearly filamentous fashion with this antibody



Western blot of rat cortex lysate showing specific immunolabeling of the ~50k GFAP protein.

Western Blot
Western Blot of Rabbit anti-Glial Fibrillary Acidic Protein (GFAP) antibody. Lane 1: rat cortex lysate. Lane 2: none. Load: 10 µg per lane. Primary antibody: GFAP antibody at 1:400 for overnight at 4°C. Secondary antibody: IRDye800™ chicken secondary antibody at 1:10,000 for 45 min at RT. Block: 5% BLOTTO overnight at 4°C. Predicted/Observed size: ~ 50kDa/~50kDa for GFAP protein. Other band(s): splice variants and isoforms.

References

- Gleichman AJ et al. A toolbox of astrocyte-specific, serotype-independent adeno-associated viral vectors using microRNA targeting sequences. *Nat Commun.* (2023)

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