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Anti-GFAP Antibody (Monoclonal, G-A-5)

Catalog Number: MA1045

About Gfap

Glial fibrillary acidic protein (GFAP) is an intermediate filament protein of 52Kda. GFAP gene is mapped to human 17q21. GFAP is a useful marker of astroglia in the brain. Mutations in GFAP, encoding glial fibrillary acidic protein, are associated with Alexander disease.

Overview

Product Name	Anti-GFAP Antibody (Monoclonal, G-A-5)
Reactive Species	Human, Mouse, Pig, Rat
Description	Boster Bio Anti-GFAP Antibody (Monoclonal, G-A-5) catalog # MA1045. Tested in IF, IHC, IHC-F, WB applications. This antibody reacts with Human, Mouse, Pig, Rat.
Application	IF, IHC, IHC-F, WB
Clonality	Monoclonal G-A-5
Formulation	Mouse IgG in stabilizing components, 1.2% sodium acetate and 0.01mg NaN3.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Mouse
Uniprot ID	P47819

Technical Details

Immunogen	GFAP from pig spinal cord.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Mouse IgG (EK1001) for Western blot, and HRP Conjugated anti-Mouse IgG Super Vision Assay Kit (SV0001-1) for IHC(P) and IHC(F).
Cross Reactivity	No cross-reactivity with other proteins
Isotype	Mouse IgG1
Form	Lyophilized
Concentration	Adding 1 ml of PBS buffer will yield a concentration of 100 ug/ml.
Purification	Ascites
Suggested Dilutions	Western blot, 0.5-1ug/ml, Human, mouse, pig, rat Immunohistochemistry (Paraffin-embedded Section), 0.4-1ug/ml, Human, pig, rat Immunohistochemistry (Frozen Section), 0.5-1ug/ml, Human, pig, rat, -

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	Immunofluorescence, 2ug/ml, Rat

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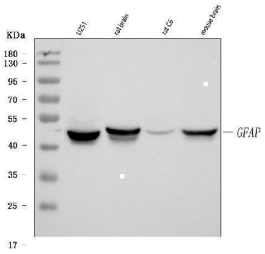
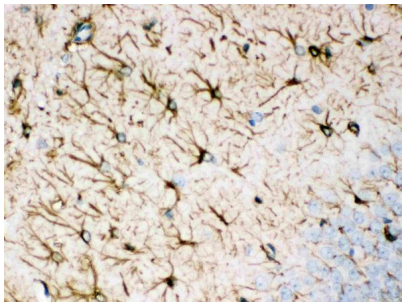
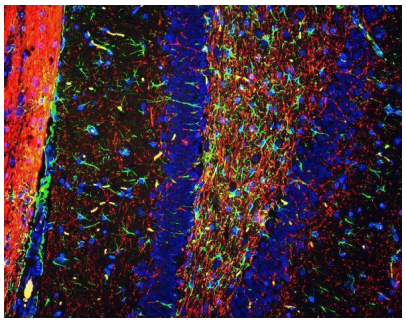
Anti-GFAP Antibody (Monoclonal, G-A-5) (MA1045) Images



Western blot analysis of GFAP using anti-GFAP antibody (MA1045). Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human U251 whole cell lysates, Lane 2: rat brain tissue lysates, Lane 3: rat C6 whole cell lysates, Lane 4: mouse brain tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-GFAP antigen affinity purified monoclonal antibody (Catalog # MA1045) at 1 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for GFAP at approximately 50 kDa. The expected band size for GFAP is at 54 kDa.



IHC analysis of GFAP using anti-GFAP antibody (MA1045). GFAP was detected in a paraffin-embedded section of rat brain tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml mouse anti-GFAP Antibody (MA1045) overnight at 4°C. Peroxidase Conjugated Goat Anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Mouse IgG Super Vision Assay Kit (Catalog # SV0001) with DAB as the chromogen.



IF analysis of GFAP using anti-GFAP antibody (MA1045) and anti-MBP antibody (PA1050) GFAP was detected in paraffin-embedded section of rat brain tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6 epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL mouse anti-GFAP Antibody (MA1045)and anti-MBP Antibody (PA1050) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Mouse IgG (BA1126) and Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) were used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

IF analysis of GFAP using anti-GFAP antibody (MA1045) . GFAP was detected in an immunocytochemical section of rat C6 cells. The cells were fixed with 4% paraformaldehyde for 10 minutes and then treated with a membrane

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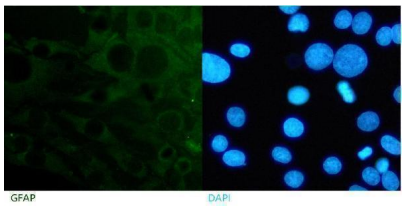
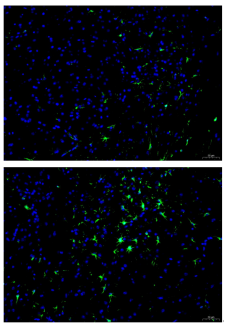
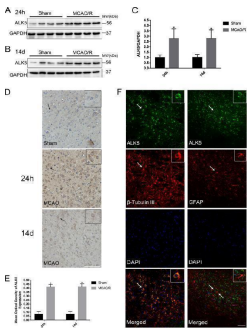


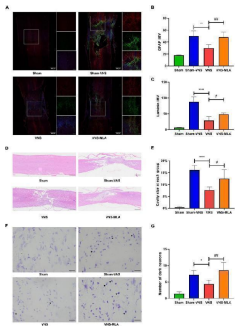
permeabilization agent (AR0205) for 5 minutes.The cells were blocked with 10% goat serum. And then incubated with mouse anti-GFAP Antibody (MA1045) at a dilution of 2 ug/mL overnight at 4°C. DyLight®488 Conjugated Goat Anti-mouse IgG (BA1126) was used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



IF analysis of GFAP using anti-GFAP antibody (MA1045). GFAP was detected in a paraffin-embedded section of rat spinal tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1:200 rabbit anti-GFAP Antibody (PA1050) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody incubated for 45 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



ALK5 is increased in the ischemic hemisphere in a MCAO/R rat model. a Representative images of ALK5 expression in the ischemic hemisphere 24 h after I/R (n = 6 biological replicates). b Representative images of ALK5 expression in the ischemic hemisphere at 14 d after I/R (n = 6 biological replicates). c Comparison of mean intensity ratios in Western blot analysis. d Representative images of immunohistochemical staining for ALK5 expression 24 h and 14 d after I/R (n = 5 biological replicates) (scale bar = 100 um). e Comparison of the mean density value in immunohistochemical analysis for ALK5 expression. f Representative images of immunofluorescence staining for ALK5 (green), beta-III tubulin (red)/GFAP (red) and cellular nuclei (blue). (scale bar = 100 um). Arrows show the positive cells, and the inserted images show magnified images of representative cells. * P



Vagus nerve stimulation (VNS) decreases spinal cord tissue damage. (A–C) Representative Immunofluorescence (IF) staining images of each group post injure 28 days, and bar charts show the fluorescence intensity mean value (IMV) for GFAP and Laminin, n = 5 per group, scale bar = 500 or 200 um. (D,E) Representative Hematoxylin-eosin (HE) staining images 28 days after injury and quantification data of cavity necrotic tissue in each group, n = 5 per group, scale bar = 500 um. (F,G) Representative Nissl staining images 28 days after injury and quantification of the numbers of Nissl-stained dark neurons in each group, n = 5 per group, scale bar = 20 um. * P < 0.05, ** P < 0.01, and **** P < 0.0001 between the Sham and Sham-VNS groups, # P < 0.05, ## P < 0.01 between the VNS and VNS-MLA groups.Index in PubMed under a CC BY license. PMID: 35464311

Effects of MSCs treatment on the phenotype distribution of

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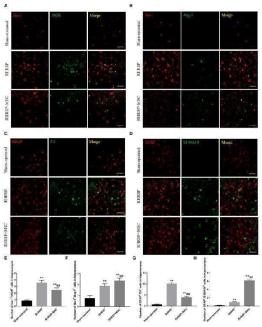
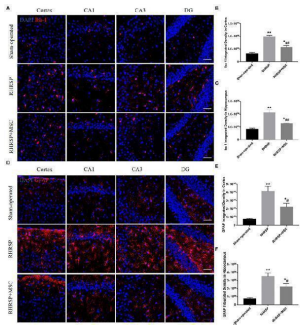
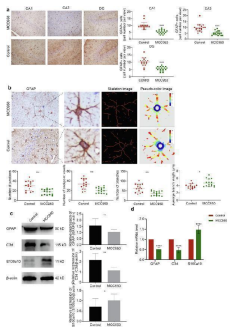


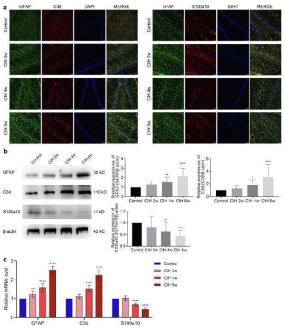
microglia and astrocytes. (A–D) Double immunofluorescence staining of Iba-1/iNOS-positive M1 microglia, Iba-1/Arg-1-positive M2 microglia, GFAP/C3-positive A1 astrocytes and GFAP/S100A10-positive A2 astrocytes in hippocampus. (E–H) Representative quantification showing that MSC significantly decreased the number of M1, A1 cells and increased the number of M2, A2 cells in hippocampus. (** P < 0.01, vs. Sham-operated group, ## P < 0.01, vs. RHRSP group; n = 6/group). scale bar = 50 um.Index in PubMed under a CC BY license. PMID: 35663575



Effects of MSCs treatment on the activation of microglia and astrocytes. (A,D) Representative images of immunofluorescence staining of Iba-1 and GFAP in the cortex and hippocampus. (B,C,E,F) Quantification of immunofluorescence staining for Iba-1 and GFPAP in the cortex and hippocampus (* P < 0.05, ** P < 0.01, vs. sham-operated group; # P < 0.05, ## P < 0.01, vs. RHRSP group; n = 6/group). scale bar = 50 um.Index in PubMed under a CC BY license. PMID: 35663575

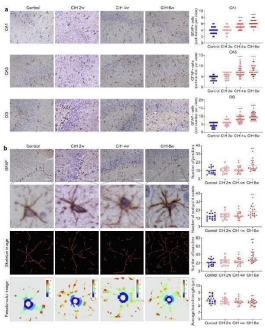


Inhibition of NLRP3 inflammasome reversed CIH-related A1/A2 astrocyte phenotypic transformation. a GFAP immunohistochemical staining and GFAP + cell count. b Sholl analysis of morphological changes of astrocytes. c-d Expression of GFAP, C3d, and s100a10 detected by Western blotting and RT-qPCR. Scale bar = 50 um. Data are presented as the mean ± SD. For RT-qPCR experiments, each group consisted of 4 rats, and the experiment was repeated 3 times; for Western blotting, the experiment was repeated 4 times and there were 5 rats per group. For statistical analysis, an unpaired t-test was used. * P

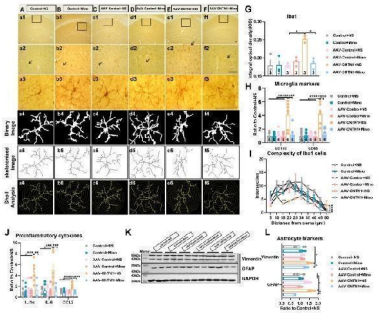


CIH induced A1/A2 phenotype astrocyte transformation, with the increase of A1 type. a Immunofluorescence images of astrocytes. The astrocytes were labeled by anti-GFAP (green), anti-C3d (red), and anti-S100a10 (red). b Expression of GFAP, C3d, and S100a10 was detected by Western blotting. c The mRNA expression of GFAP, C3d, and S100a10. Scale bar = 50 um. Data are presented as the mean ± SD. ANOVA with Tukey’s post hoc test was used to compare the control, CIH 2w, CIH 4w, and CIH 6w groups. For RT-qPCR experiments, each group consisted of 4 rats, and the experiment was repeated 3 times; for western blotting, which was repeated 4 times, there were 5 rats per group. * P

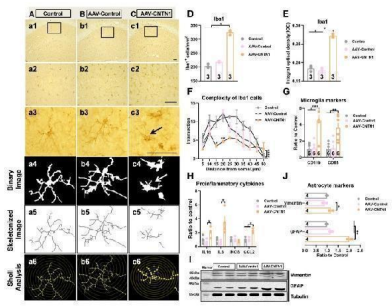
CIH induced activation of astrocytes. a GFAP immunohistochemical staining and GFAP + cell count in each subregion of the hippocampus. b Sholl analysis of morphological changes of astrocytes under CIH. Scale bar = 50 um. Data are presented as the mean ± SD. ANOVA with Tukey’s post hoc test was used to compare the control, CIH 2w, CIH 4w, and CIH 6w group. There were three rat brain



slices in each group, and 5–6 visual fields were randomly selected according to different subregions for statistical analysis. * P



Minocycline inhibited microglia activation and the following astrocyte activation induced by hippocampal CNTN1 overexpression. (A-F) Representative images showed immunostaining against microglial marker Iba1 on brain sections in hippocampus of mice in different groups. (G) Quantiative analysis of Iba1 positive microglia in hippocampus of mice in different groups by integrated optical density (IOD). (H) Quantitative real time qPCR detection of mRNA expression of CD11b and CD68 in hippocampus. (I) Quantitative analyses of complexity with Iba1 positive microglia in hippocampus in different groups. (J) Quantitative real time qPCR detection of mRNA expression of IL1alpha, IL6 and CCL2 in hippocampus in different groups. n=6 per group. (K&L) Representative immunoblots (K) and quantitative analyses (L) of vimentin and GFAP expression in hippocampus in different groups. Data in , and L were analyzed by Kruskal-Wallis statistical test; Data in . I was analyzed by two-way ANOVA followed by Bonferroni’s multiple comparison tests. Data in , I and J were analyzed by one-way ANOVA followed by Bonferroni’s multiple comparison tests. Data were presented as mean ± sem. *p < 0.05, **p < 0.01, ***p < 0.001 and ****p < 0.0001. NS: Saline. Scale bar: 50 um.Index in PubMed under a CC BY license. PMID: 37196127



CNTN1 overexpression by AAV stereotactic injection activated microglia and astrocyte in the hippocampus. (A-C) Representative images showed immunostaining against microglial marker Iba1 on brain sections in the hippocampus of mice in different groups. (D&E) Quantiative analysis of Iba1 positive microglia of hippocampus in different groups by total number of microglia (D) and integrated optical density (IOD) (E). (F) Quantitative analysis complexity of Iba1 positive microglia in hippocampus with Sholl analysis in different groups. (G) Quantitative real time qPCR detection of mRNA expression levels of CD11b and CD68 in hippocampus in different groups. (H) Quantitative real time qPCR detection of mRNA expression levels of IL1alpha, IL6, iNOS and CCL2 in hippocampus in different groups. n=4 per group. (I&J) Representative immunoblot (I) and quantitative analysis (J) of vimentin and GFAP expression in hippocampus in different groups. Data in , E, H, J were analyzed by Kruskal-Wallis statistical test; Data in was analyzed by two-way ANOVA followed by Bonferroni’s multiple comparison test. Data in was analyzed by one-way ANOVA followed by Bonferroni’s multiple comparison tests. Data were presented

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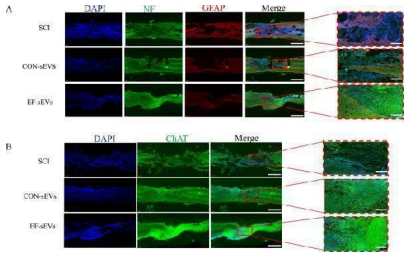
as mean ± sem. *p < 0.05, **p < 0.01 and ****p < 0.0001. Scale bar: 50 um.Index in PubMed under a CC BY license. PMID: 37196127



EF-sEVs promoted neurogenesis at the injury site in the spinal cord. A Representative immunofluorescence images showing the staining of neurofilaments (NF, green) and glial fibrillary acidic protein (GFAP, red) in lesion sites in different groups. B Fluorescent immunostaining of choline acetyl transferase (ChAT, green) in lesion sites in different groups. Scale bar=500 um (A , B left line before magnification) and 100 um (A , B right lines after magnification) Index in PubMed under a CC BY license. PMID: 38012570

103 Publications Citing This Product

1. PubMed ID: 10.3892/ol.2016.4690, Label-retaining assay enriches tumor-initiating cells in glioblastoma spheres cultivated in serum-free medium

2. PubMed ID: 33966147, Xiang Z,Jiang X,Ji R,Yuan H.Enhanced expression of P2X4 purinoceptors in pyramidal neurons of the rat hippocampal CA1 region may be involved ischemia-reperfusion injury.Purinergic Signal.2021 May 9.doi:10.1007/s11302-021-09780-z.Epub ahead of print.PMID:33966147.

3. PubMed ID: 33965566, Zhu X,Yao Y, Yang J,Zhang C,Li X,Zhang A,Liu X,Zhang C,Gan G.ADAM10 suppresses demyelination and reduces seizure susceptibility in cuprizone-induced demyelination model.Free Radic Biol Med.2021 May 6:S0891-584 9(21)00282-3.doi:10.1016/j.freeradbiomed.2021.05.001.Epub ahead of print.PMID:33965566.

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Anti-GFAP Antibody (Monoclonal, G-A-5)

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