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Anti-Caspase-3(P17)/CASP3 Antibody Picoband®

Catalog Number: PA1961-1

About Casp3

CASP3 (Caspase3 Apoptosis-Related Cysteine Protease), also known as YAMA, CPP32 or APOPAIN, is a caspase protein that interacts with caspase 8 and caspase 9. It is encoded by the CASP3 gene. The CASP3 protein is a member of the cysteine-aspartic acid protease (caspase) family. Tiso et al. (1996) used radiation hybrid mapping to localize the CPP32 gene to human chromosome 4q33-q35.1. Fernandes-Alnemri et al. (1994) found that overexpression of CPP32 in insect cells induced apoptosis. Coexpression of the 2 CPP32 subunits in insect cells also resulted in apoptosis. Tewari et al. (1995) showed that purified human ICE cleaved the Yama proenzyme into a proteolytically active form and that activated Yama cleaved PARP into the 85-kD apoptotic form.

Overview

Product Name	Anti-Caspase-3(P17)/CASP3 Antibody Picoband®
Reactive Species	Mouse, Rat
Description	Boster Bio Anti-Caspase-3 (P17)/CASP3 Antibody catalog # PA1961-1. Tested in IHC, WB applications. This antibody reacts with Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
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	Rabbit
Uniprot ID	P70677

Technical Details

Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of mouse Caspase-3(P17), different from the related rat sequence by one amino acid.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).

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Cross Reactivity	No cross-reactivity with other proteins
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Rat, Mouse Western blot, 0.1-0.5ug/ml, Mouse, Rat

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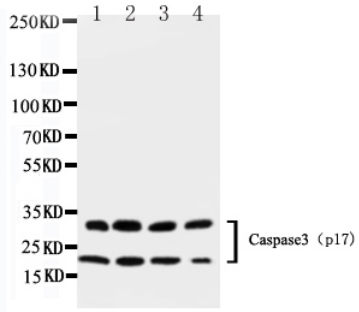
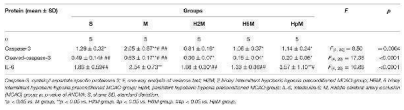
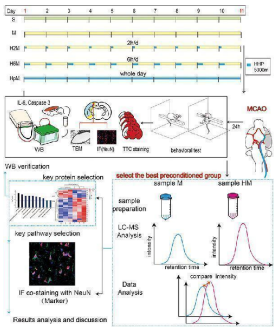
Anti-Caspase-3(P17)/CASP3 Antibody Picoband® (PA1961-1) Images



Western blot analysis of Caspase-3 (P17) using anti-Caspase-3 (P17) antibody (PA1961-1). 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 50ug of sample under reducing conditions. Lane 1: Rat Heart Tissue LysateLane 2: Rat Liver Tissue LysateLane 3: Rat Thymus Tissue LysateLane 4: Rat Spleen Tissue Lysate.After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Caspase-3 (P17) antigen affinity purified polyclonal antibody (Catalog # PA1961-1) at 0.5 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-rabbit 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 # EK1002) with Tanon 5200 system. A specific band was detected for Caspase-3 (P17) at approximately 32KD,19KD. The expected band size for Caspase-3 (P17) is at 32KD,17KD.



Mean gray value analyzed according to western blotting results of IL-6, caspase-3, and cleaved-caspase-3.Index in PubMed under a CC BY license. PMID: 34975719



Experimental workflow. One hundred four rats were randomly divided into five groups: group S (sham, n = 20), group M (middle cerebral artery occlusion [MCAO], n = 28), group H2M (intermittent hypobaric hypoxia preconditioned MCAO group, 2 h/day, n = 20), group H6M (intermittent hypobaric hypoxia preconditioned MCAO group, 6 h/day, n = 28), and group HpM (persistent hypobaric hypoxia preconditioned MCAO group, n = 28). Behavioral tests and morphological staining (TTC staining) were used to analyze the severity of infarction. Total protein expression of NeuN (a specific marker of mature neurons), caspase-3, cleaved-caspase-3, and IL-6 was estimated using western blotting, which explained the severity of injury from different perspectives. Ultrastructural changes were observed under a transmission electron microscope. The most effective pretreatment group was selected for further label-free proteomic study and provided a reliable direction for mechanism exploration. Western blotting was used to verify the expression of the target protein, and key markers for the biological process were detected using immunofluorescence. caspase-3, cysteinyl aspartate specific proteinase 3; IL-6, interleukin 6; NeuN, neuron-specific nuclear protein; TTC, 2,3,5-triphenyl tetrazolium chloride.Index in PubMed under a CC BY license. PMID: 34975719

Relative expression of IL-6, caspase-3, and cleaved-

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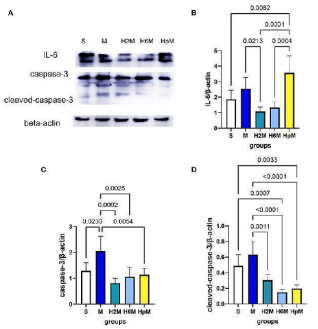
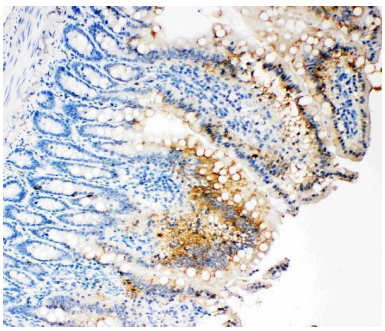
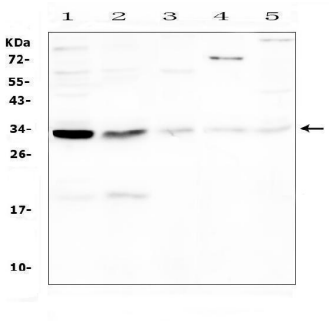


caspase-3. (A) Immunoblot results of IL-6, caspase-3, and cleaved-caspase-3. (B) Analysis of IL-6 relative expression. One-way ANOVA showed differences among the five groups, F = 10.86, p < 0.0001. (C) Analysis of caspase-3 relative expression. One-way ANOVA showed differences among the five groups, F = 8.50, p = 0.0004. (D) Analysis of cleaved-caspase-3 relative expression. One-way ANOVA showed differences among the five groups, F = 17.36, p < 0.0001. ANOVA, analysis of variance; caspase-3, cysteinyl aspartate specific proteinase 3; IL-6, interleukin 6.Index in PubMed under a CC BY license. PMID: 34975719



IHC analysis of Caspase-3 (P17)using anti-Caspase-3 (P17)antibody (PA1961-1). Caspase-3 (P17)was detected in paraffin-embedded section of rat intestine 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 rabbit anti-Caspase-3 (P17)Antibody (PA1961-1) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC)(Catalog # SA1022) with DAB as the chromogen.



Western blot analysis of Caspase-3 (P17) using anti-Caspase-3 (P17) antibody (PA1961-1). 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 50ug of sample under reducing conditions. Lane 1: mouse thymus tissue lysates, Lane 2: mouse spleen tissue lysates, Lane 3: mouse lung tissue lysates, Lane 4: mouse brain tissue lysates,Lane 5: mouse testis tissue lysates.After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Caspase-3 (P17) antigen affinity purified polyclonal antibody (Catalog # PA1961-1) at 0.5 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-rabbit 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 # EK1002) with Tanon 5200 system. A specific band was detected for Caspase-3 (P17) at approximately 32KD,19KD. The expected band size for Caspase-3 (P17) is at 32KD,17KD.

117 Publications Citing This Product

1. PubMed ID: -, Yan Zhang,Linchao Zhang,JiaLu Bao et al.Perfluorooctanoic Acid Exposure in Early Pregnancy Induces Oxidative Stress in The Uterus and Liver in Mice,13 February 2021,PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-160447

2. PubMed ID: -, Lu Kong,Yongya Wu,Wangcheng Hu,Lin Liu,Yuying Xue,Geyu Liang,Mechanisms underlying reproductive toxicity induced by nickel nanoparticles identified by comprehensive gene expression analysis in GC-1 spg cells,Environmental Pollution,2021,116556,ISSN 0269-7

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3. PubMed ID: -, Jia-Hui Yan,Yi-Shun Ji,Man-Li Yang,Jun Fu,Hu Shan,Li−Li Wang,Lei Zhang,Jing-Yuan Xiao,Xiao-Ying Kong, and Jin-Sheng Shi ACS Applied Nano Materials 2020 3 (9), 8817-8828 DOI: 10.1021/acsanm.0c01607

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