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Anti-Caspase 3 Antibody

Catalog # ABO11157

Product Information

Application	WB
Primary Accession	P42574
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Caspase-3(CASP3) detection. Tested with WB in Human;Mouse;Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	836
Other Names	Caspase-3, CASP-3, 3.4.22.56, Apopain, Cysteine protease CPP32, CPP-32, Protein Yama, SREBP cleavage activity 1, SCA-1, Caspase-3 subunit p17, Caspase-3 subunit p12, CASP3, CPP32
Calculated MW	31608
Application Details	Western blot, 0.1-0.5 □g/ml, Human, Rat, Mouse
Subcellular Localization	Cytoplasm.
Tissue Specificity	Highly expressed in lung, spleen, heart, liver and kidney. Moderate levels in brain and skeletal muscle, and low in testis. Also found in many cell lines, highest expression in cells of the immune system.
Source	Eukaryota
Protein Name	Caspase-3(CASP-3)
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg Thimerosal, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminal of human Caspase 3(207-220aa RNSKDGSWFIQSLC), identical to the related mouse sequence, and different from the related rat sequence by one amino acid.
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins

Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.
Sequence Similarities	Belongs to the peptidase C14A family.

Protein Information

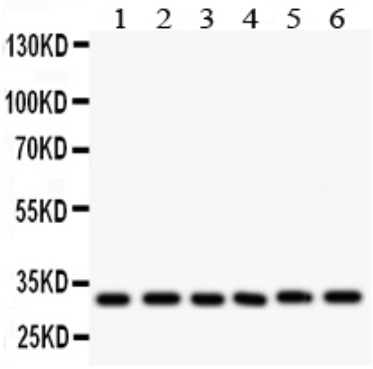
Name	CASP3
Synonyms	CPP32 {ECO:0000303|PubMed:7983002}
Function	Thiol protease that acts as a major effector caspase involved in the execution phase of apoptosis (PubMed:18723680, PubMed:20566630, PubMed:23650375, PubMed:35338844, PubMed:35446120, PubMed:7596430). Following cleavage and activation by initiator caspases (CASP8, CASP9 and/or CASP10), mediates execution of apoptosis by catalyzing cleavage of many proteins (PubMed:18723680, PubMed:20566630, PubMed:23650375, PubMed:7596430). At the onset of apoptosis, it proteolytically cleaves poly(ADP-ribose) polymerase PARP1 at a '216-Asp-|-Gly-217' bond (PubMed:10497198, PubMed:16374543, PubMed:7596430, PubMed:7774019). Cleaves and activates sterol regulatory element binding proteins (SREBPs) between the basic helix-loop-helix leucine zipper domain and the membrane attachment domain (By similarity). Cleaves and activates caspase-6, -7 and -9 (CASP6, CASP7 and CASP9, respectively) (PubMed:7596430). Cleaves and inactivates interleukin-18 (IL18) (PubMed:37993714, PubMed:9334240). Involved in the cleavage of huntingtin (PubMed:8696339). Triggers cell adhesion in sympathetic neurons through RET cleavage (PubMed:21357690). Also involved in axon pruning during brain development (By similarity). Cleaves DSG2 in response to apoptosis resulting in a loss of full length DSG2 at desmosome cell junctions and subsequent loss of cell-cell adhesion (PubMed:17559062). Also cleaves JUP in response to apoptosis (PubMed:17559062). Cleaves and inhibits serine/threonine-protein kinase AKT1 in response to oxidative stress (PubMed:23152800). Acts as an inhibitor of type I interferon production during virus-induced apoptosis by mediating cleavage of antiviral proteins CGAS, IRF3 and MAVS, thereby preventing cytokine overproduction (PubMed:30878284). Also involved in pyroptosis by mediating cleavage and activation of gasdermin-E (GSDME) (PubMed:35338844, PubMed:35446120). Cleaves XRCC4 and phospholipid scramblase proteins XKR4, XKR8 and XKR9, leading to promote phosphatidylserine exposure on apoptotic cell surface (PubMed:23845944, PubMed:33725486). Cleaves BIRC6 following inhibition of BIRC6-caspase binding by DIABLO/SMAC (PubMed:36758104, PubMed:36758106).
Cellular Location	Cytoplasm.
Tissue Location	Highly expressed in lung, spleen, heart, liver and kidney. Moderate levels in brain and skeletal muscle, and low in testis. Also found in many cell lines, highest expression in cells of the immune system.

Background

Caspase 3(caspase 3, apoptosis-related cysteine peptidase) is a caspase protein that interacts with caspase 8 and caspase 9, also known as Caspase-3, PARP CLEAVAGE PROTEASE, APOPAIN, CPP32, CPP32B, YAMA. It is a member of the cysteine-aspartic acid protease(caspase) family. PCR analysis of 16 human tissues revealed expression of full-length CASP3, as well as CASP3s at somewhat lower levels, in all tissues tested. Western blot analysis of 3 cell lines revealed the prominent CASP3 band at 32 kD and CASP3s at 20 kD. Several human cancer cell lines showed coexpression of both variants at the mRNA and protein levels.

Overexpression of the catalytically inactive CASP3s by human kidney cells offered some resistance to inducers of apoptosis, and CASP3s accumulation could be enhanced with addition of proteasome inhibitors. Sequential activation of caspases plays a central role in the execution-phase of cell apoptosis. Alternative splicing of this gene results in two transcript variants that encode the same protein. Encoded by the CASP3 gene, CASP3 orthologs have been identified in numerous mammals for which complete genome data are available. Unique orthologs are also present in birds, lizards, lissamphibians, and teleosts. Nicholson et al. developed a potent peptide aldehyde inhibitor and showed that it prevented apoptotic events in vitro, suggesting that apopain/CPP32 is important for the initiation of apoptotic cell death.

Images



Anti- CASP3 antibody, ABO11157, Western blottingAll lanes: Anti CASP3 (ABO11157) at 0.5ug/mlLane 1: Rat Cardiac Muscle Tissue Lysate at 50ugLane 2: Rat Liver Tissue Lysate at 50ugLane 3: Rat Thymus Tissue Lysate at 50ugLane 4: MCF-7 Whole Cell Lysate at 40ugLane 5: SMMC Whole Cell Lysate at 40ugLane 6: HT1080 Whole Cell Lysate at 40ugPredicted bind size: 31KDObserved bind size: 31KD

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.