10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Cleaved-CASP3 (Asp175) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3725a

Product Information

Application	DB, IHC-P, E
Primary Accession	P42574
Other Accession	P55213, Q95ND5, P70677, Q08DY9
Reactivity	Human, Rat, Mouse
Predicted	Bovine, Mouse, Pig, Rat, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB25833
Calculated MW	31608
Antigen Region	149-175

Additional Information

Gene ID	836
Other Names	Caspase-3, CASP-3, Apopain, Cysteine protease CPP32, CPP-32, Protein Yama, SREBP cleavage activity 1, SCA-1, Caspase-3 subunit p17, Caspase-3 subunit p12, CASP3, CPP32
Target/Specificity	This Cleaved antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 149-175 amino acids from human Cleaved.
Dilution	DB~~1:500 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Cleaved-CASP3 (Asp175) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

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

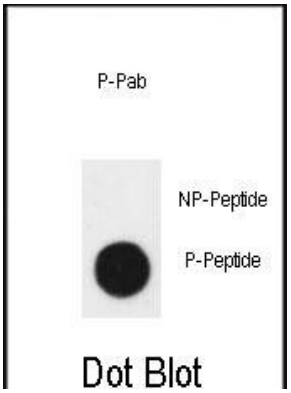
CASP3 encodes a protein which is a member of the cysteine-aspartic acid protease (caspase) family. Sequential activation of caspases plays a central role in the execution-phase of cell apoptosis. Caspases exist as inactive proenzymes which undergo proteolytic processing at conserved aspartic residues to produce two subunits, large and small, that dimerize to form the active enzyme. This protein cleaves and activates caspases 6, 7 and 9, and the protein itself is processed by caspases 8, 9 and 10. It is the predominant caspase involved in the cleavage of amyloid-beta 4A precursor protein, which is associated with neuronal death in Alzheimer's disease.

References

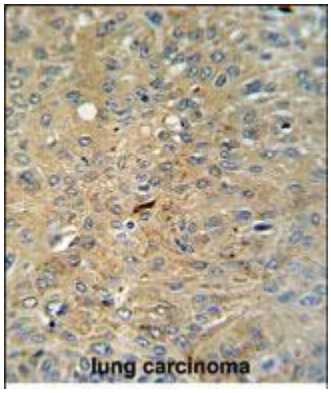
Mei, Y., et al. Mol. Cell 37(5):668-678(2010) Sohn, E.J., et al. Cancer Res. 70(3):1154-1163(2010) Karamitopoulou, E., et al. Pathology 42(1):37-42(2010)

Images

Dot blot analysis of anti-Cleaved-CASP3 (Asp175)



Antibody (Cat. #AP3725a) on nitrocellulose membrane. 50ng of Cleaved-peptide or Non Cleaved-peptide per dot were adsorbed. Antibody working concentrations are 0.5ug per ml.



Cleaved-CASP3 (Asp175)Antibody (Cat. #AP3725a) IHC analysis in formalin fixed and paraffin embedded human lung carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the Cleaved-CASP3 (Asp175)Antibody for immunohistochemistry. Clinical relevance has not been evaluated.

Citations

- LncRNA HRCEG, regulated by HDAC1, inhibits cells proliferation and epithelial-mesenchymal-transition in gastric cancer
- Conjunctival Melanoma Targeted Therapy: MAPK and PI3K/mTOR Pathways Inhibition.
- The Functional Characterization of Long Non-coding RNA Lnc_bc060912 in Human Lung Carcinoma Cells.
- FKBP11 protects intestinal epithelial cells against inflammation □induced apoptosis via the JNK □caspase pathway in Crohn's disease.
- Differential Neurotoxicity Related to Tetracycline Transactivator and TDP-43 Expression in Conditional TDP-43 Mouse Model of Frontotemporal Lobar Degeneration.
- PSMD7 downregulation induces apoptosis and suppresses tumorigenesis of esophageal squamous cell carcinoma the mTOR/p70S6K pathway.
- The long noncoding RNA ASNR regulates degradation of Bcl-2 mRNA through its interaction with AUF1.

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