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Product Information

Anti-Caspase 3
produced in rabbit, IgG fraction of antiserum

Catalog Number **C9598**

Synonyms: Anti-Apopain; Anti-CPP32; Anti-Yama

Product Description

Anti-Caspase 3 is produced in rabbit using a synthetic peptide (SGISLDNSYKMDYPE-K) corresponding to the N-terminal region of caspase 3 of human origin (amino acids 29-43 with C-terminally added lysine), conjugated to KLH, as immunogen This sequence, unique to caspase 3, corresponds to N-terminal of the enzyme p20 subunit and is highly conserved in rat and mouse caspase 3. Whole antiserum is purified to provide an IgG fraction of antiserum

Anti-Caspase 3 (CPP32) recognizes human caspase 3 (32 kDa) by immunoblotting. Staining of the caspase 3 band by immunoblotting is specifically inhibited with the immunizing peptide.

Apoptosis or programmed cell death (PCD), is an essential mechanism for controlling cell number during embryonic development (particularly in the CNS and the immune system) in homeostasis through adult life and in cellular defense against tumorigenesis. Apoptosis can be triggered by a variety of cellular "death" stimuli including TNF, Fas ligand (FasL), and granzyme B. Among the many known effectors and regulators of apoptosis, the ICE-related, cysteine aspartic-specific proteases or caspases play a crucial role in apoptosis in almost every cell type.[1,2] At least 13 different caspases have been identified which can be grouped in three different subfamilies based on their substrate specificities. Members of this family show significant homology to other known cysteine proteases, including the *C. elegans* cell death protein (Ced-3) and interleukin-1β-converting enzyme (ICE). Caspase 3 is one of the key executioners of apoptosis downstream in the apoptotic pathway, as it is activated in cells by various death signals.[3,4] Caspase 3 is a cytosolic protein found in cells as an inactive 32 kDa proenzyme. It is activated by proteolytic cleavage into the 20 kDa (p20) and 11 kDa (p11) active subunits only when cells undergo apoptosis.[4] Many key proteins are cleaved by caspase 3 during apoptosis, including poly(ADP-ribose) polymerase (PARP), sterol-regulatory element-binding proteins (SREBPs), DNA-dependent protein kinase (DNA-PK), α-fodrin, gelsolin, PKCδ and DFF45/ICAD.[2,5-7] In some neurodegenerative diseases, such as Huntington disease (HD) and Alzheimer's disease (AD), specific neuronal caspase substrates have been identified. In Huntington disease (HD), caspase 3 specifically cleaves the HD gene product, Huntingtin.[8] High levels of caspase 3 are found in lymphocytes, suggesting that caspase 3 is an important mediator of apoptosis in the immune system.[3] Deletion of CASP-3 gene in mice results in hyperplasia and cell abnormalities,[9] indicating that caspase 3 is essential for morphogenetic cell death during normal brain development.

Reagent

Solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at -20 °C. For continuous use, the product may be stored at 2-8 °C for up to one month. For extended storage, freeze in working aliquots at -20 °C. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a minimum working antibody dilution of 1:3,000 is determined by immunoblotting using a whole cell extract of the human T-cell leukemia Jurkat cell line.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilution by titration.

References

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MG,KAA,PHC 08/10-1