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CASP1 Antibody (N-term) Blocking Peptide
Synthetic peptide
Catalog # BP6703a

Specification

CASP1 Antibody (N-term) Blocking Peptide - Product Information

Primary Accession P29466

CASP1 Antibody (N-term) Blocking Peptide - Additional Information

Gene ID 834

Other Names
Caspase-1, CASP-1, Interleukin-1 beta convertase, IL-1BC, Interleukin-1 beta-converting enzyme, ICE, IL-1 beta-converting enzyme, p45, Caspase-1 subunit p20, Caspase-1 subunit p10, CASP1, IL1BC, IL1BCE

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CASP1 Antibody (N-term) Blocking Peptide - Protein Information

Name CASP1

Synonyms IL1BC, IL1BCE

Function
Thiol protease involved in a variety of inflammatory processes by proteolytically cleaving other proteins, such as the precursors of the inflammatory cytokines interleukin-1 beta (IL1B) and interleukin 18 (IL18) as well as the pyroptosis inducer Gasdermin-D (GSDMD), into active mature peptides (PubMed:15326478, PubMed:1574116, PubMed:7876192, PubMed:15498465, PubMed:9334240, PubMed:26375003, PubMed:32051255, PubMed:37993714). Plays a key role in cell immunity as an inflammatory response initiator: once activated through formation of an inflammasome complex, it initiates a pro-inflammatory response through the cleavage of the two inflammatory cytokines IL1B and IL18,

releasing the mature cytokines which are involved in a variety of inflammatory processes (PubMed:1574116, PubMed:7876192, PubMed:15498465, PubMed:15326478, PubMed:32051255). Cleaves a tetrapeptide after an Asp residue at position P1 (PubMed:1574116, PubMed:7876192, PubMed:15498465). Also initiates pyroptosis, a programmed lytic cell death pathway, through cleavage of GSDMD (PubMed:26375003). In contrast to cleavage of interleukin IL1B, recognition and cleavage of GSDMD is not strictly dependent on the consensus cleavage site but depends on an exosite interface on CASP1 that recognizes and binds the Gasdermin-D, C-terminal (GSDMD-CT) part (PubMed:32051255, PubMed:32109412, PubMed:32553275). Cleaves and activates CASP7 in response to bacterial infection, promoting plasma membrane repair (PubMed:22464733). Upon inflammasome activation, during DNA virus infection but not RNA virus challenge, controls antiviral immunity through the cleavage of CGAS, rendering it inactive (PubMed:28314590). In apoptotic cells, cleaves SPHK2 which is released from cells and remains enzymatically active extracellularly (PubMed:20197547).

Cellular Location
Cytoplasm. Cell membrane

Tissue Location
Expressed in larger amounts in spleen and lung. Detected in liver, heart, small intestine, colon, thymus, prostate, skeletal muscle, peripheral blood leukocytes, kidney and testis. No expression in the brain.

CASP1 Antibody (N-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

CASP1 Antibody (N-term) Blocking Peptide - Images

CASP1 Antibody (N-term) Blocking Peptide - Background

CASP1 is 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 2 subunits, large and small, that dimerize to form the active enzyme. CASP1 was identified by its ability to proteolytically cleave and activate the inactive precursor of interleukin-1, a cytokine involved in the processes such as inflammation, septic shock, and wound healing. This protein has been shown to induce cell apoptosis and may function in various developmental stages.

CASP1 Antibody (N-term) Blocking Peptide - References

Nasirudeen,A.M., J. Med. Virol. 81 (6), 1069-1081 (2009)Basak,C., J. Biol. Chem. 280 (6), 4279-4288

(2005)