

Recombinant Human CASP8 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50110

Size: 10ug, 100ug

Protein Name: Caspase-8 (CASP-8) (EC 3.4.22.61) (Apoptotic cysteine protease) (Apoptotic protease Mch-5) (CAP4) (FADD-homologous ICE/ced-3-like protease) (FADD-like ICE) (FLICE) (ICE-like apoptotic protease 5) (MORT1-associated ced-3 homolog) (MACH) [Cleaved into: Caspase-8 subunit p18; Caspase-8 subunit p10]

Synonym: CASP8, MCH5

UniProt ID: Q14790

UniProt Link: www.uniprot.org/uniprotkb/Q14790/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 479 AA

Molecular Weight: 55 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDFSRNLYDIGEQLDSEDLASLKFLSLDYIPQRKQPEIKDALMLFQRLQEKRMLEESNLSFLKELLFRI
NRLDLLITYLNTRKEEMERELQTPGRAQISAYRVMYQISEEVSRSELRSFKFLLQEEISKCKLDDDM
NLLDIFIEMEKRVILGEGKLDILKRVCAQINKSLLKIINDYEEFSKERSSSLEGSPDEFSGNGEELCGVMTI
SDSPREQDSESQTLDKVYQMKSKPRGYCLIINNHNFARKAREKVPKLHSIRDNRNGTHLDAGALTTTTFE
ELHFEIKPHDDCTVEQIYEILKIYQLMDHSNMDCFICCILSHGDKGIIYGTGQEAPIYELTSQFTGLKC
PSLAGKPKVFFIQACQGDNYQKGIPVETDSEEQPYLEMDLSSPQTRYIPDEADFLLGMATVNNCVSY
RNPAEGTWYIQSLCQSLRERCPRGDDILTILTEVNYEVSNKDDKKNMGKQMPQPTFTLRKKLVFSPD

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.



4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant Caspase-8 (CASP-8) (EC 3.4.22.61) (Apoptotic cysteine protease) (Apoptotic protease Mch-5) (CAP4) (FADD-homologous ICE/ced-3-like protease) (FADD-like ICE) (FLICE) (ICE-like apoptotic protease 5) (MORT1-associated ced-3 homolog) (MACH) [Cleaved into: Caspase-8 subunit p18; Caspase-8 subunit p10] produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Thiol protease that plays a key role in programmed cell death by acting as a molecular switch for apoptosis, necroptosis and pyroptosis, and is required to prevent tissue damage during embryonic development and adulthood (PubMed:23516580, PubMed:35338844, PubMed:35446120, PubMed:8681376, PubMed:8681377, PubMed:8962078, PubMed:9006941, PubMed:9184224). Initiator protease that induces extrinsic apoptosis by mediating cleavage and activation of effector caspases responsible for FAS/CD95-mediated and TNFRSF1A-induced cell death (PubMed:23516580, PubMed:35338844, PubMed:35446120, PubMed:8681376, PubMed:8681377, PubMed:8962078, PubMed:9006941, PubMed:9184224). Cleaves and activates effector caspases CASP3, CASP4, CASP6, CASP7, CASP9 and CASP10 (PubMed:16916640, PubMed:8962078, PubMed:9006941). Binding to the adapter molecule FADD recruits it to either receptor FAS/TNFRSF6 or TNFRSF1A (PubMed:8681376, PubMed:8681377). The resulting aggregate called the death-inducing signaling complex (DISC) performs CASP8 proteolytic activation (PubMed:9184224). The active dimeric enzyme is then liberated from the DISC and free to activate downstream apoptotic proteases (PubMed:9184224). Proteolytic fragments of the N-terminal propeptide (termed CAP3, CAP5 and CAP6) are likely retained in the DISC (PubMed:9184224). Also cleaves and activates BID, thereby promoting cytochrome C release from mitochondria (By similarity). In addition to extrinsic apoptosis, also acts as a negative regulator of necroptosis: acts by cleaving RIPK1 at 'Asp-324', which is crucial to inhibit RIPK1 kinase activity, limiting TNF-induced apoptosis, necroptosis and inflammatory response (PubMed:31827280, PubMed:31827281). Also able to initiate pyroptosis by mediating cleavage and activation of gasdermin-C and -D (GSDMC and GSDMD, respectively): gasdermin cleavage promotes release of the N-terminal moiety that binds to membranes and forms pores, triggering pyroptosis (PubMed:32929201, PubMed:34012073). Initiates pyroptosis following inactivation of MAP3K7/TAK1 (By similarity). Also acts as a regulator of innate immunity by mediating cleavage and inactivation of N4BP1 downstream of TLR3 or TLR4, thereby promoting cytokine production (By similarity). May participate in the Granzyme B (GZMB) cell death pathways (PubMed:8755496). Cleaves PARP1 and PARP2 (PubMed:8681376). Independent of its protease activity, promotes cell migration following phosphorylation at Tyr-380 (PubMed:18216014, PubMed:27109099).; [Isoform 5]: Lacks the catalytic site and may interfere with the pro-apoptotic activity of the complex.; [Isoform 6]: Lacks the catalytic site and may interfere with the pro-apoptotic activity of the complex.; [Isoform 7]: Lacks the catalytic site and may interfere with the pro-apoptotic activity of the complex (Probable). Acts as an inhibitor of the caspase cascade (PubMed:12010809).; [Isoform 8]: Lacks the catalytic site and may interfere with the pro-apoptotic activity of the complex.

Subcellular Localization: Cytoplasm . Nucleus . Cell projection, lamellipodium . Note=Recruitment to lamellipodia of migrating cells is enhanced by phosphorylation at Tyr-380.

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.



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- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.