

Recombinant Rat CASP8 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP52578

Size: 10ug, 100ug

Protein Name: Caspase-8 (CASP-8) (EC 3.4.22.61) [Cleaved into: Caspase-8 subunit p18; Caspase-8 subunit p10]

Synonym: Casp8

UniProt ID: Q9JHX4

UniProt Link: www.uniprot.org/uniprotkb/Q9JHX4/entry

Species Source: Rat

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 482 AA

Molecular Weight: 55 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MDFHSCLYDIAERLGNEELAALKFLCLDHIPQKKQESINDVLVLFQRLQEEGMLEEDNLSFLKELLFHI
SRRDLLSRVLKSSPEEMVRELQVLGKAQVSAYRVMLFKLSEDMDKEDLKSFKLLITEIPKCKLQDNS
SLLDIFVEMEKRTILAENNLVTLKSICFRVNRSLGRIDDYERSSTERRMSTEGGEELPVSVLDEVTIK
MQDMWDSPGEQESLNSDNVYQMKSKPRGYCLIFNNNNFSKAREDIPKLSNMRDRKGTNYDEEA
LSKTFKELHFEIVSFSDCTASQIHEVLVSYQSKDHKGKDCFICCILSHGDKGIVYGTGKEASIELTS
YFTGSKCPSLAGPKIFFIQACQGNNFQKAVPVPDETGLEQEHVLEEDSSSYKNYIPDEADFLLGMA
TVKNCVSYRDPTRGTWYIQSLCQSLRERCPRGEDILSILTVNYDVSNDNPRNMKGKMPQPIFTLR
KKLFFPPN

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) [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 (By similarity). 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:10197541). Cleaves and activates effector caspases CASP3, CASP4, CASP6, CASP7, CASP9 and CASP10 (By similarity). Binding to the adapter molecule FADD recruits it to either receptor FAS/CD95 or TNFRSF1A (PubMed:10197541). The resulting aggregate called the death-inducing signaling complex (DISC) performs CASP8 proteolytic activation (By similarity). The active dimeric enzyme is then liberated from the DISC and free to activate downstream apoptotic proteases (By similarity). Proteolytic fragments of the N-terminal propeptide (termed CAP3, CAP5 and CAP6) are likely retained in the DISC (By similarity). 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-325', which is crucial to inhibit RIPK1 kinase activity, limiting TNF-induced apoptosis, necroptosis and inflammatory response (By similarity). 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 (By similarity). 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 (By similarity). Cleaves PARP1 and PARP2 (By similarity).

Subcellular Localization: Cytoplasm . Nucleus .

6. Notes

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