Caspase-7/CASP7 Protein, Human (His)

Cat. No.:	HY-P74347
Synonyms:	CMH-1; CASP-7; Caspase-7; MCH3; ICE-LAP3
Species:	Human
Source:	E. coli
Accession:	P55210 (M1-Q303)
Gene ID:	840
Molecular Weight:	Approximately 20&11 kDa

PROPERTIES

Biological Activity	The enzyme activity of this recombinant protein is testing in progress, we cannot offer a guarantee yet.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 20 mM HEPES, 100 mM NaCl, 1 mM EDTA, 0.10% Sucrose, 0.1% chaps, pH 7.5. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	Caspase-7/CASP7 Protein, a thiol protease, intricately participates in various programmed cell death processes, including apoptosis, pyroptosis, or granzyme-mediated programmed cell death. This multifaceted protein catalyzes the proteolytic cleavage of target proteins, such as CLSPN, PARP1, PTGES3, and YY1, upon activation by initiator caspases (CASP8, CASP9, and/or CASP10), thereby mediating the execution phase of apoptosis. Notably, CASP7 displays a preference for Asp-Glu-Val-Asp (DEVD) consensus sequences and exhibits plasticity for alternate non-canonical sequences. In the inflammatory response to bacterial infection, CASP7 plays a crucial role by cleaving and activating sphingomyelin phosphodiesterase SMPD1 in the extracellular milieu, promoting membrane repair. Moreover, CASP7 regulates pyroptosis in intestinal epithelial cells and granzyme-mediated programmed cell death in hepatocytes, contributing to membrane repair and counteracting the action of gasdermin-D (GSDMD) pores and perforin (PRF1) pores, respectively. Additionally, CASP7 inhibits type I interferon production during virus-induced apoptosis by cleaving antiviral proteins CGAS, IRF3, and MAVS. Despite its diverse roles, CASP7 lacks enzymatic activity itself.

Caution: Product has not been fully validated for medical applications. For research use only.

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