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Product Information

Caspase 5
Human, recombinant
Expressed in *E. coli*

Product Code **C 6482**
Storage Temperature -70°C

Synonyms: ICERel-III; TY; Ich-3

Product Description

Caspase 5 (ICERel-III, TY, or Ich-3) is a member of the caspase family of cysteine proteases. Caspases are synthesized as inactive proenzymes. The proenzymes contain N-terminal prosequences of various lengths followed by a large subunit (17-22 kDa) and a small subunit (10-12 kDa). Caspases are activated by cleavage at specific Asp residues to produce the two subunits. Caspase 5 is a heterotetramer consisting of two large (19.5 kDa) and two small (10 kDa) subunits.^{1,2} In some cases, the subunits in the proenzyme are separated by a linker that may be involved in regulation of the activation of the caspase. To date the mechanism of caspase 5 activation and the role of caspase 5 in apoptosis are poorly understood.

All caspases contain an active-site pentapeptide of the general structure QACXG (where X is R, Q, or G). The amino acids Cys-285 and His-237 involved in catalysis and those involved in forming the P1 carboxylate binding pocket (Arg-179, Gln-283, Arg-341, and Ser-347) are conserved in all caspases, except for the substitution of Thr for Ser-347 in caspase 8. This explains the absolute requirement for an Asp in the P1 position. Residues forming the P2-P4 binding pocket are not well conserved. This suggests they may determine the substrate specificities of the caspases. Evidence suggests that not all caspases are required for cell death, and some caspases appear to be more important than others.²

This product is supplied as a lyophilized powder containing 0.052% ammonium sulfate, 0.158% Tris-HCl, and 0.76% sodium chloride.

Specific Activity: Approximately 5,000 units/mg protein

Unit Definition: One unit will hydrolyze 1 nmole of the caspase substrate WEHD-pNA (to p-nitroaniline) per hour at pH 7.2 at 37°C . The reaction buffer used for the enzymatic assay of caspase 5 contains 50 mM Hepes, pH 7.2, 50 mM NaCl, 0.1% Chaps, 10 mM EDTA, 5% Glycerol, and 10 mM DTT.

Preparation Instructions

Reconstitute in phosphate buffered saline. Store solutions in aliquots at -70°C .

Storage/Stability

The product ships on dry ice and storage at -70°C is recommended. Repeated freezing and thawing is not recommended.

References

1. Cohen, G.M., Biochem. J., **326**, 1-16 (1997).
2. Nicholson, D.W., and Thornberry, N.A., Trends Biochem. Sci., **22**, 299-306 (1997).

Related Products

Substrates:

N-Acetyl-Trp-Glu-His-Asp-p-nitroanilide, Product Code A 6845

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