

## Granzyme B/GZMB Protein, Human (HEK293, His)

Cat. No.:	HY-P75157
Synonyms:	Granzyme B; CTLA-1; CCP1; Fragmentin-2; Gzmb
Species:	Human
Source:	HEK293
Accession:	P10144 (M1-Y247)
Gene ID:	3002
Molecular Weight:	35-40 kDa

### PROPERTIES

<b>Biological Activity</b>	Measured by its ability to cleave a peptide substrate, t-Butyloxycaronyl-Ala-Ala-Asp-ThioBenzylester (Boc-AAD-SBzl), in the presence of 5,5'-Dithio-bis (2-nitrobenzoic acid) (DTNB) and the specific activity is $\geq 1500$ pmol/min/ $\mu$ g. Note: The enzyme needs to be activated by Active Cathepsin C.
<b>Appearance</b>	Lyophilized powder.
<b>Formulation</b>	Lyophilized from a 0.2 $\mu$ m filtered solution of PBS, pH 7.4. Normally 5% - 8% trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
<b>Endotoxin Level</b>	<1 EU/ $\mu$ g, determined by LAL method.
<b>Reconstitution</b>	It is not recommended to reconstitute to a concentration less than 100 $\mu$ g/mL in ddH <sub>2</sub> O.
<b>Storage &amp; Stability</b>	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.
<b>Shipping</b>	Room temperature in continental US; may vary elsewhere.

### DESCRIPTION

<b>Background</b>	Granzyme B (GZMB) is a highly abundant protease residing in the cytosolic granules of cytotoxic T-cells and natural killer cells, playing a pivotal role in immune defense mechanisms. Upon delivery into the target cell through the immunological synapse, GZMB activates caspase-independent pyroptosis by catalyzing the cleavage of gasdermin-E (GSDME). This results in the release of the pore-forming moiety of GSDME, triggering pyroptosis and ultimately leading to target cell death. GZMB exhibits a substrate specificity for cleavage after aspartate residues. Additionally, it is implicated in an activation cascade of caspases, including caspase-3, -9, and -10, thereby contributing to apoptosis execution. Moreover, GZMB is involved in the response to bacterial infection, where it cleaves and activates caspase-7, promoting plasma membrane repair. The multifaceted activities of GZMB highlight its crucial role in orchestrating immune responses and cellular defense mechanisms.
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**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA