

Stromelysin-1/MMP-3 Protein, Human

Cat. No.:	HY-P73297
Synonyms:	Stromelysin-1; SL-1; MMP-3; Transin-1; STMY1
Species:	Human
Source:	E. coli
Accession:	P08254 (Y18-T272)
Gene ID:	4314
Molecular Weight:	Approximately 34 kDa

PROPERTIES

AA Sequence	<p>Y P L D G A A R G E</p> <p>D T S M N L V Q K Y L E N Y Y D L K K D V K Q F V R R K D S G</p> <p>P V V K K I R E M Q K F L G L E V T G K L D S D T L E V M R K P R C G V P D V G</p> <p>H F R T F P G I P K W R K T H L T Y R I V N Y T P D L P K D A V D S A V E K A L</p> <p>K V W E E V T P L T F S R L Y E G E A D I M I S F A V R E H G D F Y P F D G P G</p> <p>N V L A H A Y A P G P G I N G D A H F D D D E Q W T K D T T G T N L F L V A A H</p> <p>E I G H S L G L F H S A N T E A L M Y P L Y H S L T D L T R F R L S Q D D I N G</p> <p>I Q S L Y G P P P D S P E T</p>
Biological Activity	Measured by its ability to cleave the fluorogenic peptide substrate, Mca-RPKPVE-Nva-WR-K(Dnp)-NH ₂ and the specific activity is >300 pmoles/min/μg. (Activation description: The proenzyme needs to be activated by Chymotrypsin for an activated form).
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris, 10 mM CaCl ₂ , 1uM ZnCl ₂ , 50 mM NaCl, 0.5% Brij35, pH 7.0. Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween 80 are added as protectants before lyophilization.
Endotoxin Level	Less than 1 EU/μg as determined by LAL test.
Reconstitution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH ₂ O.
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

Stromelysin-1/MMP-3, a metalloproteinase, exhibits a broad substrate specificity, capable of degrading various components of the extracellular matrix (ECM) such as fibronectin, laminin, gelatins (type I, III, IV, and V), collagens (III, IV, X, and IX), and cartilage proteoglycans. This enzyme plays a pivotal role in activating different molecules, including growth factors, plasminogen, or other matrix metalloproteinases like MMP9. Upon release into the ECM, the inactive pro-enzyme undergoes activation through the plasmin cascade signaling pathway. Stromelysin-1/MMP-3 also functions intracellularly, as observed in dopaminergic neurons where it becomes activated by the serine protease HTRA2 during stress, contributing to dopamine neuronal degeneration by mediating microglial activation and alpha-synuclein/SNCA cleavage. Additionally, this metalloproteinase plays a role in immune response and exhibits antiviral activity against various viruses, including vesicular stomatitis virus, influenza A virus (H1N1), and human herpes virus 1. Mechanistically, it translocates from the cytoplasm into the cell nucleus upon virus infection to modulate NF-kappa-B activities.

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

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