

ENPP-1 Protein, Human (HEK293, His)

Cat. No.:	HY-P77923
Synonyms:	E-NPP 1; NPPase; ENPP1; NPPS; PC1; PDNP1; Ly-41 Antigen; M6S1; M6S1NPP1; NPP1; PCA1; PCA1ARHR2
Species:	Human
Source:	HEK293
Accession:	P22413 (K98-D925)
Gene ID:	5167
Molecular Weight:	110-120 kDa

PROPERTIES

AA Sequence

K P S C A K E V K S	C K G R C F E R T F	G N C R C D A A C V	E L G N C C L D Y Q
E T C I E P E H I W	T C N K F R C G E K	R L T R S L C A C S	D D C K D K G D C C
I N Y S S V C Q G E	K S W V E E P C E S	I N E P Q C P A G F	E T P P T L L F S L
D G F R A E Y L H T	W G G L L P V I S K	L K K C G T Y T K N	M R P V Y P T K T F
P N H Y S I V T G L	Y P E S H G I I D N	K M Y D P K M N A S	F S L K S K E K F N
P E W Y K G E P I W	V T A K Y Q G L K S	G T F F W P G S D V	E I N G I F P D I Y
K M Y N G S V P F E	E R I L A V L Q W L	Q L P K D E R P H F	Y T L Y L E E P D S
S G H S Y G P V S S	E V I K A L Q R V D	G M V G M L M D G L	K E L N L H R C L N
L I L I S D H G M E	Q G S C K K Y I Y L	N K Y L G D V K N I	K V I Y G P A A R L
R P S D V P D K Y Y	S F N Y E G I A R N	L S C R E P N Q H F	K P Y L K H F L P K
R L H F A K S D R I	E P L T F Y L D P Q	W Q L A L N P S E R	K Y C G S G F H G S
D N V F S N M Q A L	F V G Y G P G F K H	G I E A D T F E N I	E V Y N L M C D L L
N L T P A P N N G T	H G S L N H L L K N	P V Y T P K H P K E	V H P L V Q C P F T
R N P R D N L G C S	C N P S I L P I E D	F Q T Q F N L T V A	E E K I I K H E T L
P Y G R P R V L Q K	E N T I C L L S Q H	Q F M S G Y S Q D I	L M P L W T S Y T V
D R N D S F S T E D	F S N C L Y Q D F R	I P L S P V H K C S	F Y K N N T K V S Y
G F L S P P Q L N K	N S S G I Y S E A L	L T T N I V P M Y Q	S F Q V I W R Y F H
D T L L R K Y A E E	R N G V N V V S G P	V F D F D Y D G R C	D S L E N L R Q K R
R V I R N Q E I L I	P T H F F I V L T S	C K D T S Q T P L H	C E N L D T L A F I
L P H R T D N S E S	C V H G K H D S S W	V E E L L M L H R A	R I T D V E H I T G
L S F Y Q Q R K E P	V S D I L K L K T H	L P T F S Q E D	

Biological Activity

Measured by its ability to hydrolyze thymidine 5'-monophosphate p-nitrophenyl ester. The specific activity is 117007.4074 pmol/min/μg, as measured under the described conditions.

Appearance

Lyophilized powder.

Formulation

Lyophilized from 0.22 μm filtered solution in PBS (pH 7.4). Normally 8% trehalose is added as protectant before lyophilization.

Endotoxin Level

<1 EU/μg, determined by LAL method.

Reconstitution	It is not recommended to reconstitute to a concentration less than 100 µg/mL in ddH ₂ O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
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

ENPP-1 Protein, a nucleotide pyrophosphatase, plays a crucial role in bone mineralization and soft tissue calcification by regulating pyrophosphate levels. By preferentially hydrolyzing ATP and other nucleoside 5' triphosphates, such as GTP, CTP, and UTP, ENPP-1 generates diphosphate (PPi), which inhibits the further growth of nascent hydroxyapatite crystals, thereby preventing excessive bone mineralization and calcification of soft tissues. Additionally, it participates in the hydrolysis of diadenosine polyphosphates and 3',5'-cAMP to AMP, and may regulate nucleotide sugar availability in the endoplasmic reticulum and Golgi, influencing purinergic signaling. ENPP-1 also contributes to the repression of hedgehog signaling, inhibiting ectopic joint calcification and maintaining articular chondrocytes. Furthermore, it is implicated in modulating insulin sensitivity and function, participating in melanogenesis, and can hydrolyze 2',3'-cGAMP, a second messenger involved in triggering type-I interferon production. The exact role of 2',3'-cGAMP hydrolysis in the extracellular space remains unclear.

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

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