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ENPP1 Blocking Peptide(N-term)

Synthetic peptide

Catalog # BP19744A

Specification

ENPP1 Blocking Peptide(N-term) - Product Information

Primary Accession	P22413
Other Accession	NP_006199.2

ENPP1 Blocking Peptide(N-term) - Additional Information

Gene ID 5167

Other Names
Ectonucleotide pyrophosphatase/phosphodiesterase family member 1, E-NPP 1, Membrane component chromosome 6 surface marker 1, Phosphodiesterase I/nucleotide pyrophosphatase 1, Plasma-cell membrane glycoprotein PC-1, Alkaline phosphodiesterase I, Nucleotide pyrophosphatase, NPPase, ENPP1, M6S1, NPPS, PC1, PDNP1

Target/Specificity
The synthetic peptide sequence is selected from aa 21-34 of HUMAN ENPP1

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

ENPP1 Blocking Peptide(N-term) - Protein Information

ENPP1 Blocking Peptide(N-term) - Background

This gene is a member of the ecto-nucleotide pyrophosphatase/phosphodiesterase (ENPP) family. The encoded protein is a type II transmembrane glycoprotein comprising two identical disulfide-bonded subunits. This protein has broad specificity and cleaves a variety of substrates, including phosphodiester bonds of nucleotides and nucleotide sugars and pyrophosphate bonds of nucleotides and nucleotide sugars. This protein may function to hydrolyze nucleoside 5' triphosphates to their corresponding monophosphates and may also hydrolyze diadenosine polyphosphates. Mutations in this gene have been associated with 'idiopathic' infantile arterial calcification, ossification of the posterior longitudinal ligament of the spine (OPLL), and insulin resistance.

ENPP1 Blocking Peptide(N-term) - References

Ermakov, S., et al. Ann. Hum. Biol. 37(6):754-766(2010)
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Wang, M., et al. Yi Chuan 32(8):808-816(2010)
Cruz, M., et al. Diabetes Metab. Res. Rev. 26(4):261-270(2010)
Moehlecke, M., et al. Arq. Bras. Cardiol. 94(2):157-161(2010)

Name ENPP1 (HGNC:3356)

Function
Nucleotide pyrophosphatase that generates diphosphate (PPi) and functions in bone mineralization and soft tissue calcification by regulating pyrophosphate levels (By similarity). PPi inhibits bone mineralization and soft tissue calcification by binding to nascent hydroxyapatite crystals, thereby preventing further growth of these crystals (PubMed:11004006). Preferentially hydrolyzes ATP, but can also hydrolyze other nucleoside 5' triphosphates such as GTP, CTP, TTP and UTP to their corresponding monophosphates with release of pyrophosphate and diadenosine polyphosphates, and also 3',5'-cAMP to AMP (PubMed:27467858, PubMed:8001561, PubMed:25344812). May also be involved in the regulation of the availability of nucleotide sugars in the endoplasmic reticulum and Golgi, and the regulation of purinergic signaling (PubMed:27467858, PubMed:8001561). Inhibits ectopic joint calcification and maintains articular chondrocytes by repressing hedgehog signaling; it is however unclear whether hedgehog inhibition is direct or indirect (By similarity). Appears to modulate insulin sensitivity and function (PubMed:10615944). Also involved in melanogenesis (PubMed:28964717). Also able to hydrolyze 2'-3'-cGAMP (cyclic GMP-AMP), a second messenger that activates TMEM173/STING and triggers type-I interferon production (PubMed:25344812). 2'-3'-cGAMP degradation takes place in the

lumen or extracellular space, and not in the cytosol where it is produced; the role of 2'-3'-cGAMP hydrolysis is therefore unclear (PubMed:25344812). Not able to hydrolyze the 2'-3'- cGAMP linkage isomer 3'-3'-cGAMP (PubMed:25344812).

Cellular Location
[Ectonucleotide pyrophosphatase/phosphodiesterase family member 1]: Cell membrane; Single-pass type II membrane protein. Basolateral cell membrane; Single-pass type II membrane protein Note=Targeted to the basolateral membrane in polarized epithelial cells and in hepatocytes, and to matrix vesicles in osteoblasts (PubMed:11598187). In bile duct cells and cancer cells, located to the apical cytoplasmic side (PubMed:11598187)

Tissue Location
Expressed in plasma cells and also in a number of non-lymphoid tissues, including the distal convoluted tubule of the kidney, chondrocytes and epididymis (PubMed:9344668). Expressed in melanocytes but not in keratinocytes (PubMed:28964717)

ENPP1 Blocking Peptide(N-term) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides