ASPN Protein, Human (His-SUMO)

Cat. No.:	HY-P72093
Synonyms:	ASPN; ASPN protein; ASPN_HUMAN; Asporin LRR class 1; ; Asporin; Asporin proteoglycan; FLJ20129; LRR class 1; Periodontal ligament associated protein 1; Periodontal ligament-associated protein 1; PLAP 1; PLAP-1; PLAP1; SLRR 1C; SLRR1C; Small leucine rich protein 1C
Species:	Human
Source:	E. coli
Accession:	Q9BXN1 (D33-M380)
Gene ID:	54829
Molecular Weight:	Approximately 60 kDa

PROPERTIES

AA Sequence	D M E D T D D D D D D D D D D D D D D E D N S L F P T R E P R S H F F P F D L F P M C P F G C Q C Y S R V V H C S D L G L T S V P T N I P F D T R M L D L Q N N K I K E I K E N D F K G L T S L Y G L I L N N N K L T K I H P K A F L T T K K L R R L Y L S H N Q L S E I P L N L P K S L A E L R I H E N K V K K I Q K D T F K G M N A L H V L E M S A N P L D N N G I E P G A F E G V T V F H I R I A E A K L T S V P K G L P P T L L E L H L D Y N K I S T V E L E D F K R Y K E L Q R L G L G N N K I T D I E N G S L A N I P R V R E I H L E N N K L K K I P S G L P E L K Y L Q I I F L H S N S I A R V G V N D F C P T V P K M K K S L Y S A I S L F N N P V K Y W E M Q P A T F R C V L S R M S V Q L G N F G M
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm sterile filtered PBS, 6% Trehalose, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O.
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	ASPN protein serves as a negative regulator in the differentiation and mineralization processes of the periodontal ligament (PDL), ensuring the prevention of ossification and maintaining the homeostasis of the tooth-supporting system. Its inhibitory action involves blocking BMP2-induced cytodifferentiation of PDL cells by preventing BMP2 binding to the BMPR1B/BMP type-1B receptor, thereby impeding BMP-dependent activation of SMAD proteins. Beyond its role in the PDL,

ASPN is a critical regulator of TGF-beta in articular cartilage, where it plays a pivotal role in cartilage homeostasis and contributes to the pathogenesis of osteoarthritis (OA) by negatively regulating chondrogenesis. Furthermore, ASPN interacts with TGFB1, TGFB2, and TGFB3, inhibiting their binding, and engages in calcium binding, participating in osteoblast-driven collagen biomineralization activity. Its intricate interactions with BMP2, type II collagen, and type I collagen underscore its multifaceted involvement in cellular processes that maintain tissue integrity and regulate bone development.

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