Recombinant ASPN protein (His tag)

Catalog Number	545856
Synonyms	Periodontal ligament-associated protein 1; PLAP-1
Species	Human
Expression System	E. coli
Accession	Q9BXN1
Molecular Weight	Predictes a molecular mass of 36.52 kDa. In SDS-PAGE under reducing conditions, it migrates as an approximately 37 kDa band.

Product Information

Sequence Region	74-380
Form	Lyophilized powder
Formulation	Lyophilized from sterile PBS, pH 7.4
Purity	>88%, by SDS-PAGE with Coomassie Brilliant Blue staining.
Endotoxin	Not tested.
Activity	Not tested.
Stability	Samples are stable for up to twelve months from date of receipt at -70℃
Protein Construction	DNA encoding 74-380 aa (Q9BXN1) were fused with 6His tag.

Storage & Handling

Reconstitution	Reconstitute at 0.25 μg/μl in sterile water for short-term storage. Reconstitution with 50% glycerol solution is recommended for longer term storage (see Stability and Storage for more details). If a different concentration is needed for your purposes please adjust the reconstitution volume as required (please note: the ion concentration of the final solution will vary according to the volume used). Note: Centrifuge vial before opening. When reconstituting, gently pipet and wash down the sides of the vial to ensure full recovery of the protein into solution.
Storage	Store it under sterile conditions at -20℃ to -80℃. It is recommended that the protein be aliquoted for optimal storage. Avoid repeated freeze-thaw cycles.
Shipping	In general, recombinant proteins are provided as lyophilized powder which are shipped at ambient temperature. Bulk packages of recombinant proteins are provided as frozen liquid. They are shipped out with blue ice unless customers require otherwise.

Description

Description	Recombinant Human Asporin (PLAP-1) Fragment (aa 74-380) is a high-quality protein product designed for structural and biochemical research. This 307-amino acid fragment represents a stable, soluble unit of Asporin, ideal for investigating its critical regulatory functions in periodontal ligament homeostasis, cartilage maintenance, and mineralization processes. Asporin, also known as Periodontal ligament-associated protein 1 (PLAP-1), is a secreted extracellular matrix protein that plays essential regulatory roles in tissue homeostasis. The full-length protein functions as a negative regulator of periodontal ligament differentiation and mineralization, preventing ossification to maintain proper tooth-supporting architecture. It inhibits BMP2-induced cytodifferentiation of PDL cells by blocking binding to BMPR1B receptor, thereby suppressing BMP-dependent SMAD protein activation. Additionally, Asporin serves as a critical regulator of TGF-beta signaling in articular cartilage, where it negatively regulates chondrogenesis by interfering with TGF-beta/receptor interactions and inhibiting canonical TGF-beta/Smad signaling pathways. The protein also binds calcium and contributes to osteoblast-driven collagen biomineralization activity. Asporin is localized to the extracellular space and extracellular matrix, positioning it to directly modulate key signaling pathways involved in tissue development and disease pathogenesis, particularly in osteoarthritis.