

Amelotin Protein, Human, Recombinant (mFc)

General Information

Synonyms:	amelotin;UNQ689
Protein Construction:	A DNA sequence encoding the human AMTN (NP_997722.1) (Met1-Gln209) was expressed with the Fc region of mouse IgG1 at the C-terminus. Predicted N terminal: Leu 17
Species:	Human
Expression Host:	HEK293 Cells
Accession:	F1T0L8
Molecular Weight:	46.2 kDa (predicted); 54 kDa (reducing conditions)

QC Testing

Biological Activity:	Activity testing is in progress. It is theoretically active, but we cannot guarantee it. If you require protein activity, we recommend choosing the eukaryotic expression version first.
Purity:	> 78 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/ μ g of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μ m filter, containing 50 mM Tris, 100 mM NaCl, 10% glycerol, 0.5 mM EDTA, pH 8.5. Typically, a mixture containing 5% to 8% trehalose, mannitol, and 0.01% Tween 80 is incorporated as a protective agent before lyophilization.

Preparation and Storage

Reconstitution:
A Certificate of Analysis (CoA) containing reconstitution instructions is included with the products. Please refer to the CoA for detailed information.

Stability & Storage:

It is recommended to store recombinant proteins at -20°C to -80°C for future use. Lyophilized powders can be stably stored for over 12 months, while liquid products can be stored for 6-12 months at -80°C. For reconstituted protein solutions, the solution can be stored at -20°C to -80°C for at least 3 months. Please avoid multiple freeze-thaw cycles and store products in aliquots.

Actual storage temperature shall be subject to the COA.

Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

Protein Background

Amelotin (AMTN) is a tooth enamel protein which is expressed in maturation-stage ameloblasts and also in the internal basal lamina of junctional epithelium, a unique epithelial structure attached to the tooth surface which protects against the constant microbiological challenge to the periodontium. TNF- α stimulates AMTN gene transcription in human gingival epithelial cells via C/EBP1, C/EBP2, and YY1 elements in the human AMTN gene promoter. AMTN mRNA levels increased at 6 h and reached maximum at 24 h in GE1 cells. Luciferase activities of

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the mouse AMTN gene promoter constructs were induced by TGF β 1. AMTN mRNA levels were induced at the initiation of apoptosis by TGF β 1, which mediated through the Smad3 bindings to SBEs in the mouse AMTN gene promoter. Amelotin (Amtn) is a recently identified enamel protein secreted by ameloblasts at late stage of enamel development. Runt-related transcription factor 2 (Runx2) in combination with the coactivator core-binding factor β (Cbf β) regulates the early stages of tooth development.

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