

## Aminopeptidase N/CD13 Protein, Human, Recombinant (I603M, His)

### General Information

Synonyms:	alanyl (membrane) aminopeptidase;LAP1;APN;CD13;P150;PEPN;GP150
Protein Construction:	A DNA sequence encoding the metalloprotease domain (Lys 69-Lys 967, I603M) of the mature form of human ANPEP (NP_001141.2) was expressed with N-terminal signal peptide and C-terminal polyhistidine tag. Predicted N terminal: Lys 69
Species:	Human
Expression Host:	HEK293 Cells
Accession:	P15144
Molecular Weight:	104.2 kDa (predicted); 135-140 kDa (reducing condition, due to glycosylation)

### QC Testing

Biological Activity:	Measured by its ability to cleave the fluorogenic peptide substrate, Ala-7-amido-4-methylcoumarin (Ala-AMC). The specific activity is >2,500 pmoles/min/μg.
Purity:	> 97 % as determined by SDS-PAGE
Endotoxin:	< 1.0 EU/μg of the protein as determined by the LAL method.
Formulation:	Lyophilized from a solution filtered through a 0.22 μm filter, containing PBS, pH 7.3. 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:**  
Reconstituted with sterile deionized water to 0.25 mg/mL. Reconstitution conditions may vary depending on the lot.

**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

Aminopeptidase N (ANPEP or APN), also known as CD13, is a cell-surface metalloprotease located in the small-intestinal and renal microvillar membrane, as well as other plasma membranes. It belongs to the peptidase M1 family. CD13 plays a role in the final digestion of peptides generated from hydrolysis of proteins by gastric and pancreatic proteases and is involved in the metabolism of regulatory peptides by diverse cell types. CD13/APN is a

potent regulator of angiogenesis which is essential for tumor invasion and metastasis, and its transcription in activated endothelial cells is induced by angiogenic growth factors via the RAS/MAPK pathway. In addition, this enzyme has been shown to participate in antigen processing and presentation, and accordingly, defects in this gene appear to be a cause of various types of leukemia or lymphoma and carcinomas.

### Reference

Pasqualini R, et al. (2000) Aminopeptidase N is a receptor for tumor-homing peptides and a target for inhibiting angiogenesis. *Cancer Res.* 60(3): 722-7.

Mabjeesh SJ, et al. (2005) Aminopeptidase N gene expression and abundance in caprine mammary gland is influenced by circulating plasma peptide. *J Dairy Sci.* 88(6): 2055-64.

Dunkel B, et al. (2009) Neutrophil and platelet activation in equine recurrent airway obstruction is associated with increased neutrophil CD13 expression, but not platelet CD41/61 and CD62P or neutrophil-platelet aggregate formation. *Vet Immunol Immunopathol.* 131(1-2): 25-32.

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