

DESCRIPTION

Source Mouse myeloma cell line, NS0-derived
Val20-Ala358, with a C-terminal 10-His tag
Accession # NP_112205

N-terminal Sequence Analysis Val20

Predicted Molecular Mass 37.2 kDa

SPECIFICATIONS

SDS-PAGE 41-42 kDa, reducing conditions

Activity Measured by its binding ability in a functional ELISA.
Immobilized rhCubulin at 1 µg/mL can bind rhAmnionless with an apparent $K_D < 100$ nM.

Endotoxin Level <0.10 EU per 1 µg of the protein by the LAL method.

Purity >95%, by SDS-PAGE under reducing conditions and visualized by silver stain.

Formulation Lyophilized from a 0.2 µm filtered solution in PBS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution Reconstitute at 100 µg/mL in sterile PBS.

Shipping The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.

Stability & Storage **Use a manual defrost freezer and avoid repeated freeze-thaw cycles.**

- 12 months from date of receipt, -20 to -70 °C as supplied.
- 1 month, 2 to 8 °C under sterile conditions after reconstitution.
- 3 months, -20 to -70 °C under sterile conditions after reconstitution.

BACKGROUND

Amnionless (AMN) is an approximately 48 kDa type I transmembrane protein that is required for surface expression of the extracellular membrane-associated protein Cubilin (1 - 5). The two form a complex termed CUBAM (4, 5). The 453 amino acid (aa) human AMN precursor contains a 19 aa signal sequence, a 338 aa extracellular domain (ECD), a 21 aa transmembrane domain, and a 75 aa cytoplasmic domain. The ECD contains two potential N-glycosylation sites and a cysteine-rich vWFC domain. Two cytoplasmic consensus FxNPxP/F sequences for clathrin-coated pit targeting mediate endocytosis of compounds bound by Cubilin (3, 5). The ECD of human AMN shares 67%, 66%, 76% and 78% aa identity with mouse, rat, canine and bovine AMN, respectively. AMN is present during gastrulation in the visceral endoderm and required for primitive streak formation during embryonic development in mouse (6). Transcription from an alternate start site in humans results in an isoform starting at M55 that may also function in development (7). AMN is highly expressed on polarized epithelia in the apical brush border membranes of small intestine and kidney proximal convoluted tubules (3 - 5, 7). Intestinal CUBAM is required for absorption of cobalamin (vitamin B12) when complexed with intrinsic factor (IF), and mutations of AMN or Cubilin cause Imersund-Grasbeck syndrome, also called megaloblastic anemia-1 (4, 5, 7). In the kidney, the CUBAM complex is thought to be important for reabsorption of proteins from filtrate, notably albumin and the molecules it carries (3, 8). Cubilin or CUBAM can be tightly associated with megalin, another endocytic receptor that contributes to stable expression of Cubilin, and to uptake of vitamin and lipoprotein complexes in the kidney and placenta (1, 9).

References:

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