

DESCRIPTION

Source	Chinese Hamster Ovary cell line, CHO-derived		
	Human Collectrin (Glu15-Pro141) Accession # Q9HBJ8	IEGRMD	Human IgG ₁ (Pro100-Lys330)
	N-terminus		C-terminus

N-terminal Sequence Analysis	Glu15
Structure / Form	Disulfide-linked homodimer
Predicted Molecular Mass	41 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	54-64 kDa, reducing conditions
Activity	Measured by its ability to inhibit proliferation of mIMCD-3 mouse epithelial cells. The ED ₅₀ for this effect is 1.0-4.0 µg/mL.
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 500 µg/mL in 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. <ul style="list-style-type: none"> ● 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

Collectrin, also known as TMEM27 and NX-17, is a 35-45 kDa transmembrane protein that shows structural similarity to the C-terminal region of Angiotensin Converting Enzyme 2 (ACE-2) but lacks peptidase activity (1, 2). Mature human Collectrin consists of a 127 amino acid (aa) extracellular domain (ECD), a 21 aa transmembrane segment, and a 60 aa cytoplasmic domain (3). Within the ECD, human Collectrin shares 87% and 89% aa sequence identity with mouse and rat Collectrin, respectively. Collectrin is expressed as a disulfide-linked homodimer of variably glycosylated subunits (4-6). It is highly expressed in the proximal convoluted tubules of renal collecting ducts and inhibits the proliferation of tubule epithelial cells (3, 6-8). It associates with several amino acid transporters on the luminal surface of these cells, where it is required for the reabsorption of multiple amino acids (7-9). Collectrin is also expressed in pancreatic islet beta cells and enhances glucose-stimulated insulin secretion as well as insulin resistance (4, 5, 9, 10). In both the kidney and pancreas, cytoplasmic Collectrin interacts with multiple components of the SNARE complex and other vesicle trafficking proteins (5, 6). A 25 kDa glycosylated fragment of the ECD can be shed from both renal tubule cells and pancreatic beta cells (4, 10). In beta cells, shedding is mediated by BACE2, and the portion left in the membrane can be subsequently cleaved by gamma-Secretase, releasing the intracellular domain into the cytosol (11). Inhibition of Collectrin shedding from beta cells results in increased beta cell mass and insulin secretion (11).

References:

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