Recombinant Mouse LRPAP

Catalog Number: 4480-LR

DESCRIPTION

Source	*E. coli*-derived Gln29-Leu360, with an N-terminal Met and a C-terminal 6-His tag Accession # P55302
N-terminal Sequence Analysis	Met
Predicted Molecular Mass	39.9 kDa

SPECIFICATIONS

Activity	Measured by its ability to bind rmVLDLR (Catalog # 2258-VL) in a functional ELISA with an estimated K_D of < 0.25 nM.
Endotoxin Level	<0.01 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

LRPAP (LDL receptor-related protein-associated protein 1; also named RAP) is a ubiquitously expressed 39 kDa molecular chaperone for LDL receptor family proteins (1, 2). Mature mouse LRPAP is 332 amino acids (aa) in length and secreted into the ER/Golgi of the cell. It shares 77% and 97% aa sequence identity with human and rat LRPAP, respectively. LRPAP contains three approximately 100 aa α-helical domains (D1 - D3). The D1 domain contains a low affinity binding site for LRP, and the associated D2 and D3 domains bind LRP with high affinity (4). Domains D2 and D3 interact with each other, while D1 is independent (3). The majority of LRPAP is localized in the endoplasmic reticulum and Golgi (5). LRPAP prevents the premature interaction of LRP, LRP2/megalin, and VLDLR with their co-expressed ligands, thereby promoting proper receptor folding and export from the ER (6 - 8). Protonation of conserved histidine residues within the D3 domain induces the separation of LRPAP and LRP in the relatively acidic Golgi (9). LRPAP, which contains a C-terminal HNEL motif, can then recycle to the ER (9). A minor amount of LRPAP remains associated with LRP and can modulate receptor activity on the cell surface (5). Exogenously applied LRPAP competitively inhibits LDL receptor family binding and uptake of activated α2-macroglobulin, apoB100- or apoE-enriched LDL and VLDL particles, cholesteryl esters, and complexes of PAI-1 with either tPA or uPA (10 - 14).

References:

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