Recombinant Human Angiopoietin-like Protein 4/ANGPTL4

Catalog Number: 4487-AN

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived human Angiopoietin-like Protein 4/ANGPTL4 protein Gly26-Ser406 (Lys163Ala & Arg164Ala), with a C-terminal 6-His tag Accession # Q9BY76
N-terminal Sequence Analysis	Gly26
Structure / Form	Oligomer
Predicted Molecular Mass	43.6 kDa (monomer)

SPECIFICATIONS

SDS-PAGE	50-55 kDa, reducing conditions
Activity	Measured by its ability to inhibit lipoprotein lipase activity. Yoshida, K. *et al.* (2002) J. Lipid Res. **43**:1770. The IC_{50} value under conditions in which Recombinant Human Lipoprotein Lipase/LPL (Catalog # 9888-LL) and p-nitrophenyl butyrate are present in 0.1 M sodium phosphate, 0.15 M NaCl, 0.5% Triton® X-100, pH 7.2, is approximately 0.05-2.0 µg/mL.
Endotoxin Level	<1.0 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in MOPS, NaCl and CHAPS. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 100 µg/mL in sterile PBS.
Shipping	The product is shipped with polar packs. 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

Angiopoietin-like 4 (ANGPTL4), also known as FIAF, FARP, and PGAR, is a 55 kDa glycoprotein secreted by the liver and fat tissue. It is structurally related to the angoipoietins and contains an N-terminal coiled coil domain and a C-terminal fibrinogen-like domain which can be proteolytically separated *in vivo* (1). Mature human ANGPTL4 shares 26%-30% amino acid (aa) sequence identity with ANGPTL1, 2, 3, 5, 6, and 7. It shares approximately 75% aa sequence identity with mouse and rat ANGPT-L4. The coiled coil domain, which is not glycosylated, mediates the formation of variable sized disulfide-linked oligomers (2). This domain directly inhibits lipoprotein lipase, resulting in increased circulating triglyceride levels (3, 4). In humans, the N-terminal fragment and full length ANGPTL4 physically associate with HDL (4). In mouse, however, full length ANGPTL4 associates with HDL, while the N-terminal fragment associates with LDL (4). Circulating ANGPTL4 is decreased in type II diabetics with a subsequent loss of its normal plasma glucose lowering activity (5). Its expression in adipose tissue is induced by fasting and suppressed by feeding (6). In hypoxic areas, ANGPTL4 is induced in both vascular endothelial cells and tumor cells (7, 8). The N-terminal fragment can function as an angiogenesis inhibitor (7, 8). In contrast, the C-terminal fragment modulates cell adhesion through interactions with heparan sulfate proteoglycans, Integrins β1 and β5, Vitronectin, and Fibronectin, thereby promoting keratinocyte migration and wound healing (7, 9, 10). ANGPTL4 additionally enhances the survival of hematopoietic and mesenchymal stem cells (11, 12). The expression of an undersialylated form of ANGPTL4 in renal podocytes contributes to proteinuria and nephrotic syndrome (13).

References:

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