Leucine-Rich Alpha-2-Glycoprotein NATIVE, Human Serum

Product Data Sheet

Type: Native
Source: Human pooled serum
Species: Human
Other names: LRG

Cat. No.:

RD162183025	(0.025 mg)
RD162183100	(0.1 mg)

Description

Native protein isolated from pooled human serum, 312 AA. MW: 34,35 kDa (calculated without glycosylation). Protein identity confirmed by LC-MS/MS (NCBI no. gi|16418467).

Introduction to the Molecule

Leucine-rich alpha-2-glycoprotein (LRG) is a secretory type 1 acute phase protein whose expression is upregulated by the mediators of acute-phase response. The level of LRG in the blood increases during microbial infections and cancer, presumably as a result of the liver's response to pro-inflammatory cytokines . The function of LRG is unknown but it is proved that LRG is tightly binding to Cyt C. It is suggested that extracellular Cyt C that is released from the cell death by an acute inflammation could be trapped to form tight complex with LRG and be excluded from circulation. LRG secretion by human hepatoma cells is increased by treatment with a mixture of cytokines including IL-6, IL-1b, and TNFalpha that are known to induce acute-phase proteins. It is known that LRG plays a role in adhesive interactions between lymphocytes and the endothelium. LRG may aid in the control of granulopoiesis by helping to modulate the surface expression of different receptor types, including transforming growth factor receptor, granulocyte-macrophage colony-stimulating factor receptor and possibly the macrophage colony stimulating factor receptor. LRG normal plasma concentration is approximately of 21 µg/ml based on purification, or ~50 µg/ml measured by ELISA. Human LRG is a serum glycoprotein of 312 amino acids in length with a predicted unmodified molecular weight of 34 to 36 kDa. SDS PAGE results show LRG molecular weight ranges from 44 to 55 kDa with isoelectric points ranging from 4.52 to 4.72, suggesting that 3 of 30 modifications occur. Leucine-rich alpha-2-glycoprotein consists of a single polypeptide chain with one galactosamine and four glucosamine oligosaccharides attached. The polypeptide has two intrachain disulfide bonds and contains 312 amino acid residues of which 66 are leucine. The amino acid sequence can be exactly divided into 13 segments of 24 residues each, eight of which exhibit a periodic pattern in the occurrence of leucine, proline, and asparagine.

Research topic

Sepsis

Amino Acid Sequence

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VTLSPKDCQV FRSDHGSSIS CQPPAEIPGY LPADTVHLAV EFFNLTHLPA NLLQGASKLQ ELHLSSNGLE SLSPEFLRPV
PQLRVLDLTR NALTGLPPGL FQASATLDTL VLKENQLEVL EVSWLHGLKA LGHLDLSGNR LRKLPPGLLA NFTLLRTLDL
GENQLETLPP DLLRGPLQLE RLHLEGNKLQ VLGKDLLLPQ PDLRYLFLNG NKLARVAAGA FQGLRQLDML DLSNNSLASV
PEGLWASLGQ PNWDMRDGFD ISGNPWICDQ NLSDLYRWLQ AQKDKMFSQN DTRCAGPEAV KGQTLLAVAK SQ
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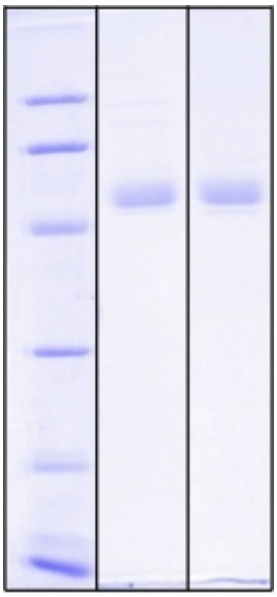
Source

Human pooled serum *(All blood samples used for protein preparation were tested and found negative for HBsAg, anti-HCV, HIV Ag/Ab, and syphilis.)*

Purity

Purity as determined by densitometric image analysis: >95%

SDS-PAGE gel



SDS-PAGE analysis of human Leucine-rich alpha-2-glycoprotein-1 native protein,

12% gel stained with Coomassie Brillant Blue R250

1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 2.5µg/lane
3. non-reduced and non-heated sample, 2.5µg/lane

Biological Activity

Protein specifically bind to human Cytochrome c1, heme protein - tested.

Endotoxin

< 1.0 EU/ug

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/ml in 20mM TRIS, 20mM NaCl, pH 8.0

Reconstitution

Add deionized water to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. Product is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage, Stability/Shelf Life

Store lyophilized protein at -80°C. Lyophilized protein remains stable until the expiry date when stored at -80°C. Aliquot reconstituted protein to avoid repeated freezing/thawing cycles and store at -80°C for long term storage. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after one week at 4°C.

Quality Control Test

BCA to determine quantity of the protein.
SDS PAGE to determine purity of the protein.
LAL to determine quantity of endotoxin.

Applications

Cell culture and/or animal studies, ELISA, Immunological methods, Western blotting

Note

All blood samples used for protein preparation were tested and found negative for HBsAg, anti-HCV, HIV Ag/Ab, and syphilis. Since no test can absolutely assure the absence of all infectious agents, this product should be handled as a potential biohazard. This product is intended for research use only.

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