BioVendor - Laboratorní medicína a.s.
Karásek 1767/1
621 00 Brno-Řečkovice a Mokrá Hora

Date of issue: 14.09.2018

PRODUCT DATASHEET

Leukocyte Cell-Derived Chemotaxin-2 Human E. coli

Cat. No.: RD172370025
Type: Recombinant protein
Size: 0.025 mg
Source: E. coli
Species: Human

Description

Total 143 AA. MW: 16 kDa (calculated). UniProtKB acc.no. O14960 (Gly19-Leu151). N-terminal histag (10 extra AA). Protein identity confirmed by LC-MS/MS.

Other names

LECT-2, hLECT2, LECT2, Leukocyte cell–derived chemotaxin 2

Introduction to the molecule

Leukocyte cell–derived chemotaxin 2 (LECT2) is a secretory protein originally identified in the process of screening for a novel neutrophil chemotactic protein. Although the original characterization of LECT2 proved to be of bovine origin from the fetal calf serum used in media, these studies led to the cloning and structural characterization of the human analogue. The human LECT2 gene consists of four exons and three introns. It has been mapped to chromosome 5q31.1-q32, a cluster harboring several genes encoding immunoregulatory cytokines. The gene codes for 151 amino acids (MW 16.38 kDa) including an 18 amino acid signal peptide. The secreted protein has 133 residues. LECT2 is expressed preferentially by human adult and fetal liver cells and is secreted into the bloodstream, which negatively regulates the homeostasis of natural killer T cells in the liver. It is a multi-functional protein that is involved in chemotaxis, cell proliferation, inflammation, immunomodulation and carcinogenesis. Along with neutrophil chemotactic properties, it is also believed that LECT2 plays a role in tissue growth and repair following damage. LECT2 is involved in many pathologic conditions. It has been identified as one of the proteins associated with human systemic amyloidosis. Leukocyte chemotactic factor 2 amyloidosis (ALECT2) is one of the amyloidosis forms, which most commonly affects the kidney and liver primarily in people of Hispanic ethnicity. Studies report that LECT2 may function in immunological events such as hepatitis and arthritis, hepatocarcinogenesis, and the negative regulation of the Wnt receptor signalling pathway in the small intestine. LECT2 significantly induces adhesion molecules and pro-inflammatory cytokines in Human umbilical vein endothelial cells, suggesting that such liver-derived hepatokine might directly mediate atherosclerotic inflammatory reactions in human endothelial cells. Recent studies indicate the possible involvement of LECT2 in metabolic diseases and suggest that LECT2 could be a novel obesity-related protein. Serum LECT2 levels were found to be increased by obesity and fatty liver, and LECT2 was shown to be a link between obesity and skeletal muscle insulin resistance. Circulating LECT2 positively correlates with the severity of both obesity and insulin resistance in humans. LECT2 could potentially be a key player in the development of hepatocellular carcinoma (HCC). It was shown that re-expression of LECT2 significantly reduced the migration and invasion of human HCC cells in vitro and significantly reduced their growth in vivo.

Research topic

Cytokines and chemokines and related molecules, Diabetology - Other Relevant Products, Energy metabolism and body weight regulation, Oncology

Amino Acid sequence

MKHHHHHHAS GPWANICAGK SSNEIRTCDR HGCGQYSAQR SQRPHQGVDI LCSAGSTVYA PFTGMIVGQE KPYQNKNAIN NGVRISGRGF CVKMFYIKPI KYKGPIKKGE KLGTLLPLQK VYPGIQSHVH IENCDSSDPT AYL

Purity

Purity as determined by densitometric image analysis: > 95 %

Endotoxin

< 1.0 EU/ug

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Formulation:

Filtered (0.4 µm) and lyophilized in 20 mM Tris buffer, 50 mM NaCl, pH 7,5

Reconstituion:

Add 200 µl of deionized water to prepare a working stock solution of approximately 0.5 mg/ml and let the lyophilized pellet dissolve completely. Filter sterilize your culture media/working solutions containing this non-sterile product before using in cell culture.

Shipping

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

Storage, Stability/Shelf Life

Store the 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 week.

Quality control

BCA to determine quantity of the protein.

SDS PAGE to determine purity of the protein.

LAL to determine quantity of endotoxin.

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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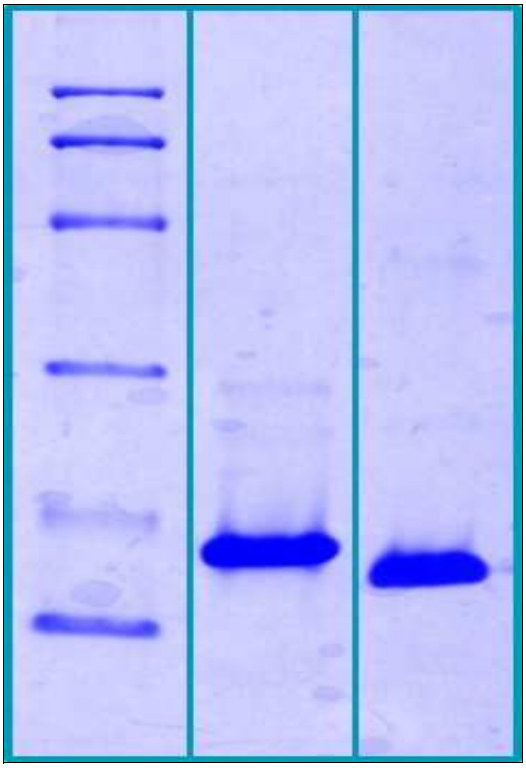

14 % SDS-PAGE separation of Human LECT-2:
1. M.W. marker – 14, 21, 31, 45, 66, 97 kDa
2. reduced and boiled sample, 2.5 µg/lane
3. non-reduced and non-boiled sample, 2.5 µg/lane

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