



Vaspin Human E. coli

Product Data Sheet

Type: Recombinant

Source: E. coli

Species: Human

Other names: Visceral adipose-specific serpin, Serpin A12, Visceral adipose tissue-derived serine protease inhibitor, OL-64, SERPINA12

Cat. No.:

RD172097100 (0.1 mg)

Description

Total 408 AA. MW: 46.7 kDa (calculated). N-terminal His-tag, 14 extra AA (highlighted). The AA sequence is identical to UniProtKB/Swiss-Prot entry Q8IW75.

Introduction to the Molecule

Visceral adipose tissue is an adipocytokine, which is part of a member of the serine protease family. The inhibitory activity of vaspin has not been described up to now, but its reactive site loop is typical for this proteinase family. Human Vaspin protein is composed of 395 amino acids and has a molecular weight of approximately 45.2 kDa and predicted pI 9.26. The cDNA was first isolated from white adipose tissue of Otsuka Long-Evans Tokushima Fatty (OLETF) rats. Vaspin mRNA expression is specific for visceral adipose tissues and it is also found circulating in the serum. The level of serum vaspin OLETF in rats increases with age up to the peak of obesity, body weight and insulin resistance. On the other hand, it decreases with worsening of diabetes. Vaspin expression is missing in the diabetes-resistant lean rats, the subdermal brown fatty tissue and other non-adipose tissues in OLETF rats. These findings lead to the conclusion that the target tissue for insulin sensitising effect of vaspin is white adipose tissue. In humans, elevated serum concentration of vaspin is associated with obesity and impaired insulin sensitivity. A correlation between increased vaspin levels, BMI and decreased insulin sensitivity has not been yet observed in patients with type 2 diabetes. Vaspin expression decreased when diabetes worsened and its levels normalised when insulin or pioglitazone is applied. Gender differences in vaspin serum levels have been found in separate studies by two different authors. The low levels of vaspin in serum seem to be typical for lean test subjects and athletes with long-term physical training. On the other hand, serum vaspin concentration increases in overweight people after they lose weight due to the increase in exercise. This paradox has been explained by the fact that serum vaspin level is differentially regulated in the non-active resting state and after exercise.

Research topic

Diabetology - Autoimmunity, Energy metabolism and body weight regulation, Reproduction

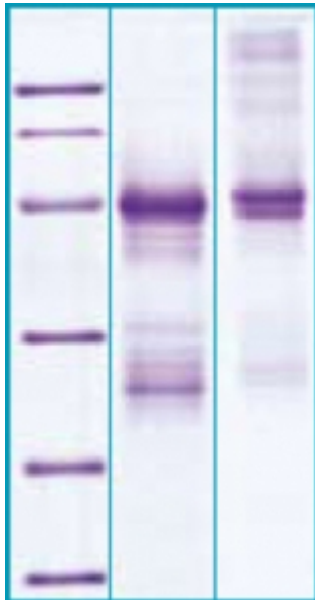
Amino Acid Sequence

MRGSHHHHHH **GMAS**LKPSFS PRNYKALSEV QGWKQRMAAK ELARQNMDLG FKLLKKLAFY NPGRNIFLSP LSISTAFSML
CLGAQDSTLD EIKQGFNFRK MPEKDLHEGF HYIIHELTQK TQDLKLSIGN TLFIDQRLQP QRKFLEDAKN FYSAETILT
FQNLEMAQKQ INDFISQKTH GKINNLINI DPGTVMLLAN YIFFRARWKH EFDPNVTKEE DFFLEKNSSV KVPMMFRSGI
YQVGYYDDKLS CTILEIPYQK NITAIFILPD EGKLKHLEKG LQVDTFSRWK TLLSRRVVDV SVPRLHMTGT FDLKKTL
GVSKIFEHGH DLTKIAPHRS LKVGEAVHKA ELKMDERGTE GAAGTGAQTL PMETPLVVKI DKPYLLLIYS EKIPSVLFLG
KIVNPIGK

Source

E. coli

SDS-PAGE gel



12% SDS-PAGE separation of Human Vaspin

1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa

2. reduced and heated sample, 5µg/lane

3. non-reduced and non-heated sample, 5µg/lane

Formulation

Filtered (0.4 µm) and lyophilized from 0.5 mg/ml in 20mM Tris buffer, 150mM NaCl, pH 7.5

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 -20°C. Lyophilized protein remains stable until the expiry date when stored at -20°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.

Applications

Western blotting

Gentaur Molecular Products
Voortstraat 49
1910 Kampenhout, Belgium
<http://www.gentaur-worldwide.com>