Cardiotrophin 1 Human E. coli

Product Data Sheet

Type: Recombinant
Source: E. coli
Species: Human
Other names: CT-1, CTF1

Cat. No.:

RD172026100	(0.1 mg)

Description

Total 212 AA. MW: 22.5 kDa (calculated). N-Terminal His-tag, 12 extra AA (highlighted).

Introduction to the Molecule

Cardiotrophin-1 (CT-1) is a 201 amino acid member of the interleukin-6 superfamily. It was identified by its ability to induce hypertrophic response in cardiac myocytes. CT-1 mRNA levels were found both in cardiac myocytes and in cardiac nonmyocytes. CT-1 was also detected in abundance in normal adult human lung and was expressed in both fetal and adult airway smooth muscle cells. CT-1activates gp130 dependent signaling and stimulates the Janus kinase/signal transducers and activators of transcription (JAK/STAT) pathway to transduce hypertrophic and cytoprotective signals in cardiac myocytes. CT-1 has also a neurotrophic function. CT-1 deficiency causes increased motoneuron cell death in spinal cord and brainstem nuclei of mice during a period between embryonic day 14 and the first postnatal week.
Moreover, CT-1 is a hepatocyte survival factor that efficiently reduces hepatocellular damage in animal models of acute liver injury. CT-1 expression is augmented after hypoxic stimulation and it can protect cardiac cells when added either prior to simulated ischaemia or at the time of reoxygenation following simulated ischaemia. CT-1 can induce expression of the protective heat shock proteins (hsps) in cardiac cells. Cardiotrophin-1 increased ventricular expression of ANP, brain natriuretic peptide (BNP) and angiotensinogen mRNA. CT-1 levels were significantly elevated in patients with heart failure, patients with dilatative cardiomyopathy, moderate/severe mitral regurgitation, stable and unstable angina and after acute myocardial infarction.

Research topic

Cardiovascular disease

Amino Acid Sequence

MRGSHHHHHH GSSRREGSLE DPQTDSSVSL LPHLEAKIRQ THSLAHLLTK YAEQLLQEYV QLQGDPFGLP SFSPPRLPVA
GLSAPAPSHA GLPVHERLRL DAAALAALPP LLDAVCRRQA ELNPRAPRLL RRLEDAARQA RALGAAVEAL LAALGAANRG
PRAEPPAATA SAASATGVFP AKVLGLRVCG LYREWLSRTE GDLGQLLPGG SA

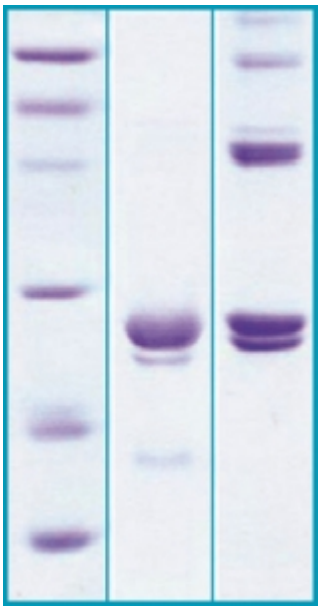
Source

E. coli

Purity

Purity as determined by densitometric image analysis: >90%

SDS-PAGE gel



12% SDS-PAGE separation of Human Cardiotrophin
1. M.W. marker - 14, 21, 31, 45, 66, 97 kDa
2. reduced and heated sample, 10µg/lane
3. non-reduced and non-heated sample, 10µg/lane

Endotoxin

< 1.0 EU/µg

Formulation

Filtered (0,4 µm) and lyophilized in 0.5 mg/mL in 0.05M Acetate buffer pH4.

Reconstitution

Add 0.1M Acetate buffer pH4 to prepare a working stock solution of approximately 0.5 mg/mL and let the lyophilized pellet dissolve completely. For conversion into higher pH value, we recommend intensive dilution by relevant buffer to a concentration of 10µg/mL. In higher concentrations the solubility of this antigen is limited. 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.
LAL to determine quantity of endotoxin.

Applications

ELISA, Western blotting

Note

This product is intended for research use only.

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