



## Cardiotrophin-1, His Tag, human recombinant (rHuCT-1-His)

**Catalog No:** 87313  
**Lot No:** XXXXX  
**Source:** *E. coli*  
**Synonyms:** CTF1, CT1, CT-1, Cardiophin 1

### Background

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 1 activates 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. CTF1 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. Cardiotrophin 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. Cardiotrophin 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. Cardiophin 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.

### Description

Cardiotrophin produced in *E. coli*, is a 22.5 kDa protein containing 200 amino acid residues of human Cardiotrophin and 12 additional amino acid residues His Tag.

### Physical Appearance

Lyophilized

### Formulation

CT-1 was filtered (0.4 µm) and lyophilized from 0.5 mg/ml in 0.05 M acetate buffer pH 4.

### Solubility

It is recommended to add 0.1 M acetate buffer pH-4 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 10 µg/ml. In higher concentrations the solubility of this antigen is limited. Protein is not sterile! Please filter the product by an appropriate sterile filter before using it in the cell culture.

### Stability

Store lyophilized protein at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles. Reconstituted protein can be stored at 4°C for a limited period of time; it does not show any change after two weeks at 4°C.

### Purity

Greater than 90% as determined by SDS-PAGE.

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### Amino Acid Sequence

MRGSHHHHHH GSSRREGSLE DPQTDSSVSL LPHLEAKIRQ THSLAHLTK YAEQLLQFYV QLQDPPFGLPSFSPRLPVA  
GLSAPAPSHA GLPVHERLRL DAAALAALPP LLDVAVCRRQA ELNPRAPRLR RRLEDAARQA RALGAAVEAL LAALGAANRG  
PRAEPPAATA SAASATGVFP AKVLGLRVCG LYREWLSRTE GDLGQLLPGG SA

### Applications

WB\*ELISA

### Usage

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