

## 32-6324: CTF1 Human

**Application :** Functional Assay

**Alternative Name :** CTF1, CT1, CT-1, Cardiophin 1, Cardiotrophin-1.

### Description

Source: Escherichia Coli.

Sterile Filtered White lyophilized (freeze-dried) powder.

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.

Cardiotrophin-1 Human Recombinant produced in E.coli is a single, non-glycosylated, polypeptide chain containing 201 amino acids and having a molecular mass of 21.2kDa. The CTF1 is purified by proprietary chromatographic techniques.

### Product Info

**Amount :** 2 µg / 10 µg

**Purification :** Greater than 95.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by SDS-PAGE.

CTF-1 protein was lyophilized from a 0.2µm filtered concentrated solution in 30% Acetonitrile and 0.1% TFA.

**Content :** It is recommended to reconstitute the lyophilized CTF1 in sterile 4mM HCl not less than 100µg/ml, which can then be further diluted to other aqueous solutions.

**Storage condition :** Lyophilized CTF1 although stable at room temperature for 3 weeks, should be stored desiccated below -18°C. Upon reconstitution CTF-1 should be stored at 4°C between 2-7 days and for future use below -18°C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please prevent freeze-thaw cycles.

**Amino Acid :** MSRREGSLED PQTDSSVSLL PHLEAKIRQT HSLAHLTKY AEQLQYEVQ LQDPPFGLPS FSPRLPVAG LSAPAPSHAG LPVHERLRD AAALAALPPL LDAVCRRQAE LNPRAPRLLR RLEDAARQAR ALGAAVEALL AALGAANRGP RAEPPAATAS AASATGVFPA KVLGLRVCGY YREWLSRTEG DLGQLLPGGS A.

### Application Note

The ED<sub>50</sub> as determined by a cell proliferation assay using human TF-1 cells is less than 1.0 ng/ml, corresponding to a specific activity of > 1.0×10<sup>6</sup> IU/mg.