SANTA CRUZ BIOTECHNOLOGY, INC.

# Cardiotrophin-1 (W-21): sc-133441

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Cardiotrophin-1 (CT-1) is a member of the IL-6 family of cytokines, which signal through gp130 receptor complexes. gp130 complexes with several different receptor subunits to transmit signals from Cardiotrophin-1, IL-6, LIF, OSM, CNTF and IL-11. Cardiotrophin-1 binds to and activates the leukemia inhibitory factor (LIF) receptor/gp130 receptor complex and has been shown to induce hypertrophy in cardiac myocytes *in vitro*. Cardiotrophin-1, a secreted protein expressed at high levels in myocardium during cardiogenesis, has been shown to promote proliferation and survival of embryonic cardiomyocytes, suggesting a role for Cardiotrophin-1 in the activation of gp130 during cardiac development. Cardiotrophin-1 is highly expressed in heart, prostate, ovary and skeletal muscle. Lower levels of expression are seen in lung, kidney, pancreas, thymus, testis and small intestine.

## REFERENCES


1. Pennica, D., King, K.L., Shaw, K.J., Luis, E., Rullamas, J., Luoh, S.M., Darbonne, W.C., Knutzon, D.S., Yen, R., Chien, K.R., et al. 1995. Expression cloning of Cardiotrophin-1, a cytokine that induces cardiac myocyte hypertrophy. Proc. Natl. Acad. Sci. USA 92: 1142-1146.
2. Klein, B. 1998. Update of gp130 cytokines in multiple myeloma. Curr. Opin. Hematol. 5: 186-191.
3. Hibi, M., Murakami, M., Saito, M., Hirano, T., Taga, T. and Kishimoto, T. 1990. Molecular cloning and expression of an IL-6 signal transducer, gp130. Cell 63: 1149-1157.
4. Ishikawa, M., Saito, Y., Miyamoto, Y., Kuwahara, K., Ogawa, E., Nakagawa, O., Harada, M., Masuda, I. and Nakao, K. 1996. cDNA cloning of rat Cardiotrophin-1 (CT-1): augmented expression of CT-1 gene in ventricle of genetically hypertensive rats. Biochem. Biophys. Res. Commun. 219: 377-381.
5. Pennica, D., Swanson, T.A., Shaw, K.J., Kuang, W.J., Gray, C.L., Beatty, B.G. and Wood, W.I. 1996. Human Cardiotrophin-1: protein and gene structure, biological and binding activities, and chromosomal localization. Cytokine 8: 183-189.
6. Wollert, K.C. and Chien, K.R. 1997. Cardiotrophin-1 and the role of gp130-dependent signaling pathways in cardiac growth and development. J. Mol. Med. 75: 492-501.


## CHROMOSOMAL LOCATION

Genetic locus: CTF1 (human) mapping to 16p11.2.

## SOURCE

Cardiotrophin-1 (W-21) is an affinity purified rabbit polyclonal antibody raised against synthetic Cardiotrophin-1 peptide of human origin.

## PRODUCT

Each vial contains 50 µg IgG in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

Cardiotrophin-1 (W-21) is recommended for detection of Cardiotrophin-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cardiotrophin-1 siRNA (h): sc-39327, Cardiotrophin-1 shRNA Plasmid (h): sc-39327-SH and Cardiotrophin-1 shRNA (h) Lentiviral Particles: sc-39327-V.

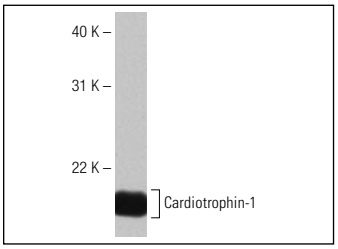
Molecular Weight of Cardiotrophin-1: 21 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA




Cardiotrophin-1 (W-21): sc-133441. Western blot analysis of Cardiotrophin-1 expression in Hep G2 whole cell lysate.

## STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.