Cardiotrophin-1 Human,
Mouse Monoclonal Antibody, Clone: 1F3

Product Data Sheet

Source of Antigen: *E. coli*
Host: Mouse
Isotype: IgG1

Other names: CT-1, CTF1

Cat. No.:
RD1820261001F3 (0.1 mg)

Research topic
Cardiovascular disease

Preparation
The antibody is a mouse monoclonal antibody against recombinant Human Cardiotrophin-1.

Amino Acid Sequence
The immunization antigen (22.5 kDa) is a protein containing 212 AA of recombinant Human Cardiotrophin-1. N-Terminal His-tag, 12 extra AA (highlighted).

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

Species Reactivity
Human
Not yet tested in other species.

Purification Method
Affinity chromatography on a column with immobilized protein G.

Antibody Content
0.1 mg (determined by BCA method, BSA was used as a standard)

Formulation
The antibody is lyophilized in 0.05 M phosphate buffer, 0.1 M NaCl, pH 7.2. **AZIDE FREE**.

Reconstitution
Add 0.1 ml of deionized water and let the lyophilized pellet dissolve completely. Slight turbidity may occur after reconstitution, which does not affect activity of the antibody. In this case clarify the solution by centrifugation.

Shipping
At ambient temperature. Upon receipt, store the product at the temperature recommended below.

Storage/Stability
The lyophilized antibody remains stable and fully active until the expiry date when stored at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles and store frozen at -80°C. Reconstituted antibody can be stored at 4°C for a limited period of time; it does not show decline in activity after one week at 4°C.

Expiration
See vial label.

Lot Number
See vial label.

Quality Control Test

Indirect ELISA - to determine titer of the antibody
SDS PAGE - to determine purity of the antibody

Applications

Western blotting

Introduction to the Molecule

Cardiotrophin-1 (CT-1) is a 201 amino acid member of the interleukin-6 superfamily. It was identified via 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 is also present in the lungs of adult humans, expressed both in 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 improved 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.

Note

This product is for research use only.

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