

# CARP (C-13): sc-23252

## BACKGROUND

A proposed genetic marker of cardiac hypertrophy, CARP (cardiac ankyrin repeat protein) is a nuclear protein with an established role in regulation of cardiac gene expression. A distinct increase in CARP expression occurs in rats with abdominal aorta constriction, spontaneous hypertension and Dahl salt-sensitivity. In cardiomyocytes, CARP inhibits transcription of both cardiac troponin C and atrial natriuretic factor. Specifically, expression of the CARP gene, which lies downstream of the cardiac homeobox gene Nkx2.5, inhibits Nkx2.5 transactivation of atrial natriuretic factor promoter. An increase in CARP expression is observed in the ventricular tissue of patients with end-stage heart failure. The major  $Ca^{2+}$  binding protein of cardiac sarcoplasmic reticulum (SR), Calsequestrin (CSQ), upregulates the CARP gene and may contribute to the development of cardiac hypertrophy and fibrosis. TGF $\beta$  induces CARP expression in vascular smooth muscle cells (VSMCs), wherein CARP may mediate the inhibitory effects of TGF $\beta$  on VSMC proliferation.

## REFERENCES

- Jeyaseelan, R., et al. 1997. A novel cardiac-restricted target for doxorubicin. CARP, a nuclear modulator of gene expression in cardiac progenitor cells and cardiomyocytes. *J. Biol. Chem.* 272: 22800-22808.
- Zou, Y., et al. 1997. CARP, a cardiac ankyrin repeat protein, is downstream in the Nkx2.5 homeobox gene pathway. *Development* 124: 793-804.
- Aihara, Y., et al. 2000. Cardiac ankyrin repeat protein is a novel marker of cardiac hypertrophy: role of M-CAT element within the promoter. *Hypertension* 36: 48-53.
- Kanai, H., et al. 2001. Transforming growth factor $\beta$ /Smads signaling induces transcription of the cell type-restricted ankyrin repeat protein CARP gene through CAGA motif in vascular smooth muscle cells. *Circ. Res.* 88: 30-36.

## CHROMOSOMAL LOCATION

Genetic locus: ANKRD1 (human) mapping to 10q23.31.

## SOURCE

CARP (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CARP of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-23252 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## RESEARCH USE

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

## APPLICATIONS

CARP (C-13) is recommended for detection of CARP of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

CARP (C-13) is also recommended for detection of CARP in additional species, including equine.

Suitable for use as control antibody for CARP siRNA (h): sc-37731, CARP shRNA Plasmid (h): sc-37731-SH and CARP shRNA (h) Lentiviral Particles: sc-37731-V.

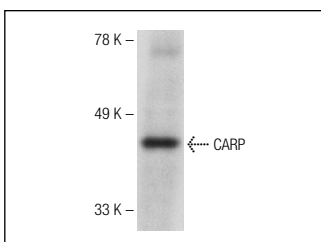
Molecular Weight of CARP: 40 kDa.

Positive Controls: Caki-1 cell lysate: sc-2224 or human heart extract: sc-363763.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CARP (C-13): sc-23252. Western blot analysis of CARP expression in human heart tissue extract.

## SELECT PRODUCT CITATIONS

- Jamesdaniel, S., et al. 2012. Cisplatin-induced ototoxicity is mediated by nitroxidative modification of cochlear proteins characterized by nitration of Lmo4. *J. Biol. Chem.* 287: 18674-18686.

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Try **CARP (G-2): sc-365056** or **CARP (E-3): sc-398139**, our highly recommended monoclonal alternatives to CARP (C-13).