

# CARP (G-2): sc-365056

## 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  $\text{Ca}^{2+}$  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.

## CHROMOSOMAL LOCATION

Genetic locus: ANKRD1 (human) mapping to 10q23.31; Ankrd1 (mouse) mapping to 19 C2.

## SOURCE

CARP (G-2) is a mouse monoclonal antibody raised against amino acids 1-120 mapping at the N-terminus of CARP of human origin.

## PRODUCT

Each vial contains 200  $\mu\text{g}$  IgG $_1$  kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CARP (G-2) is available conjugated to agarose (sc-365056 AC), 500  $\mu\text{g}$ /0.25 ml agarose in 1 ml, for IP; to HRP (sc-365056 HRP), 200  $\mu\text{g}/\text{ml}$ , for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365056 PE), fluorescein (sc-365056 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365056 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365056 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365056 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365056 AF647), 200  $\mu\text{g}/\text{ml}$ , for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365056 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365056 AF790), 200  $\mu\text{g}/\text{ml}$ , for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

CARP (G-2) is recommended for detection of CARP of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu\text{g}$  per 100-500  $\mu\text{g}$  of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for CARP siRNA (h): sc-37731, CARP siRNA (m): sc-37732, CARP shRNA Plasmid (h): sc-37731-SH, CARP shRNA Plasmid (m): sc-37732-SH, CARP shRNA (h) Lentiviral Particles: sc-37731-V and CARP shRNA (m) Lentiviral Particles: sc-37732-V.

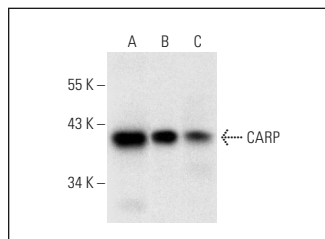
Molecular Weight of CARP: 40 kDa.

Positive Controls: Sol8 nuclear extract: sc-2157, NIH/3T3 nuclear extract: sc-2138 or human heart extract: sc-363763.

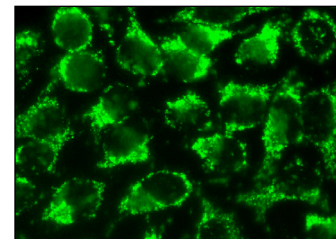
## STORAGE

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

## DATA



CARP (G-2): sc-365056. Western blot analysis of CARP expression in human heart tissue extract (A) and Sol8 (B) and NIH/3T3 (C) nuclear extracts.



CARP (G-2): sc-365056. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

## SELECT PRODUCT CITATIONS

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- Wang, X., et al. 2020. Baoyuan decoction ameliorates apoptosis via AT1-CARP signaling pathway in H9C2 cells and heart failure post-acute myocardial infarction rats. *J. Ethnopharmacol.* 252: 112536.
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- Li, Z., et al. 2022. Hgs deficiency caused restrictive cardiomyopathy via disrupting proteostasis. *Int. J. Biol. Sci.* 18: 2018-2031.
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## RESEARCH USE

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

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