

# HRC (M-14): sc-138023

## BACKGROUND

HRC (histidine rich calcium binding protein), also known as sarcoplasmic reticulum histidine-rich calcium-binding protein or HCP, is a 699 amino acid that binds low-density lipoprotein with high affinity. As a high capacity calcium binding protein, HRC regulates the sequestration and release of calcium in the lumen of the junctional sarcoplasmic reticulum (SR) of cardiac, skeletal and smooth muscle. This mechanism may involve direct interaction between HRC and the cytoplasmic domain of Triadin, an integral membrane protein of the SR. The gene encoding HRC maps to human chromosome 19q13.33 and mouse chromosome 7 B4.

## REFERENCES

- Hofmann, S.L., et al. 1989. Purification of a sarcoplasmic reticulum protein that binds  $Ca^{2+}$  and plasma lipoproteins. *J. Biol. Chem.* 264: 8260-8270.
- Hofmann, S.L., et al. 1991. cDNA and genomic cloning of HRC, a human sarcoplasmic reticulum protein, and localization of the gene to human chromosome 19 and mouse chromosome 7. *Genomics* 9: 656-669.
- Brown, S.D., et al. 1993. Mapping the Hrc gene to proximal mouse chromosome 7: delineation of a conserved linkage group with human 19q. *Genomics* 18: 459-461.
- Sacchetto, R., et al. 2001.  $Ca^{2+}$ -dependent interaction of triadin with histidine-rich  $Ca^{2+}$ -binding protein carboxyl-terminal region. *Biochem. Biophys. Res. Commun.* 289: 1125-1134.
- Lee, H.G., et al. 2001. Interaction of HRC (histidine-rich  $Ca^{2+}$ -binding protein) and Triadin in the lumen of sarcoplasmic reticulum. *J. Biol. Chem.* 276: 39533-39538.
- Kim, E., et al. 2003. Increased  $Ca^{2+}$  storage capacity in the sarcoplasmic reticulum by overexpression of HRC (histidine-rich  $Ca^{2+}$  binding protein). *Biochem. Biophys. Res. Commun.* 300: 192-196.
- Anderson, J.P., et al. 2004. HRC is a direct transcriptional target of MEF-2 during cardiac, skeletal, and arterial smooth muscle development *in vivo*. *Mol. Cell. Biol.* 24: 3757-3768.

## CHROMOSOMAL LOCATION

Genetic locus: Hrc (mouse) mapping to 7 B4.

## SOURCE

HRC (M-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HRC of mouse 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-138023 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

HRC (M-14) is recommended for detection of HRC of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HRC (M-14) is also recommended for detection of HRC in additional species, including bovine.

Suitable for use as control antibody for HRC siRNA (m): sc-146079, HRC shRNA Plasmid (m): sc-146079-SH and HRC shRNA (m) Lentiviral Particles: sc-146079-V.

Molecular Weight (predicted) of HRC: 80 kDa.

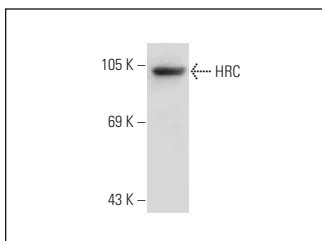
Molecular Weight (observed) of HRC: 99 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810.

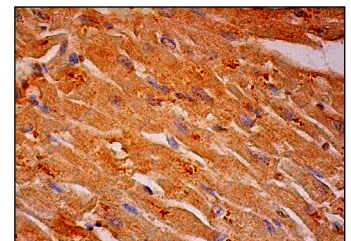
## RECOMMENDED SECONDARY REAGENTS

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



HRC (M-14): sc-138023. Western blot analysis of HRC expression in rat skeletal muscle tissue extract.



HRC (M-14): sc-138023. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## STORAGE

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