

# Cardiotin (SR-2): sc-53002

## BACKGROUND

Cardiotin is a high molecular weight protein complex located in the mitochondrial membrane. The Cardiotin structure exists as two subunits, both of which contain the same N-terminal 14 amino acid sequence, showing high homology to human skeletal muscle  $\alpha$ -actinin. This suggests that the tetrameric configuration of the Cardiotin protein structure is a transmembrane complex with the N-terminus at the cytoplasmic side of the membrane, able to interact with Actin. During cardiac contractile dysfunction, Cardiotin distribution is affected in pathological cardiomyocytes, such as chronic ischemic myocardium. The Cardiotin monoclonal antibody can be used in immunohistochemistry for the detection of a disturbed mitochondrial activity in cardiomyocytes, such as during chronic ischemia or chronic atrial fibrillation.

## REFERENCES

1. Alm, B. 1976. Piperidine: effects on locomotor activity and brain monoamine turnover. *Psychopharmacology* 50: 301-304.
2. Ausma, J., Wijffels, M., van Eys, G., Koide, M., Ramaekers, F., Alessie, M. and Borgers, M. 1997. Dedifferentiation of atrial cardiomyocytes as a result of chronic atrial fibrillation. *Am. J. Pathol.* 151: 985-997.
3. Schaart, G., Moens, L., Endert, J.M. and Ramaekers, F.C. 1997. Biochemical characterization of cardiotin, a sarcoplasmic reticulum associated protein. *FEBS Lett.* 403: 168-172.
4. Dispersyn, G.D., Geuens, E., Ver Donck, L., Ramaekers, F.C. and Borgers, M. 2001. Adult rabbit cardiomyocytes undergo hibernation-like dedifferentiation when co-cultured with cardiac fibroblasts. *Cardiovasc. Res.* 51: 230-240.
5. Ausma, J., Litjens, N., Lenders, M.H., Duimel, H., Mast, F., Wouters, L., Ramaekers, F., Alessie, M. and Borgers, M. 2001. Time course of atrial fibrillation-induced cellular structural remodeling in atria of the goat. *J. Mol. Cell. Cardiol.* 33: 2083-2094.
6. Dispersyn, G.D., Mesotten, L., Meuris, B., Maes, A., Mortelmans, L., Flameng, W., Ramaekers, F. and Borgers, M. 2002. Dissociation of cardiomyocyte apoptosis and zones. *Eur. Heart J.* 23: 849-857.

## SOURCE

Cardiotin (SR-2) is a mouse monoclonal antibody raised against the 100 kDa Cardiotin subunit.

## PRODUCT

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

## 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](http://www.scbt.com) for detailed protocols and support products.

## APPLICATIONS

Cardiotin (SR-2) is recommended for detection of Cardiotin of mouse, rat and human 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) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Cardiotin (SR-2) is also recommended for detection of Cardiotin in additional species, including bovine and porcine.

Molecular Weight of Cardiotin subunits under reducing conditions: 60/100 kDa.

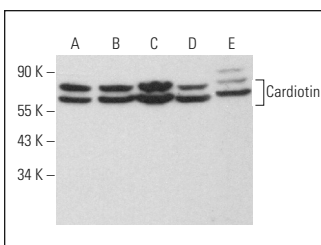
Molecular Weight of Cardiotin under non-reducing conditions: 300 kDa.

Positive Controls: A-673 cell lysate: sc-2414, HeLa whole cell lysate: sc-2200 or A-375 cell lysate: sc-3811.

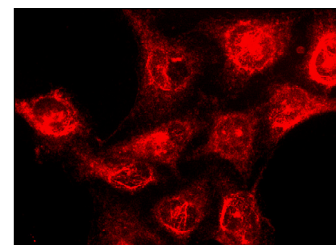
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



Cardiotin (SR-2): sc-53002. Western blot analysis of Cardiotin expression in A-673 (A), HeLa (B), A-375 (C), C2C12 (D) and L6 (E) whole cell lysates.



Cardiotin (SR-2): sc-53002. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

## RESEARCH USE

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