



# SZABO SCANDIC

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## Produktinformation



Forschungsprodukte & Biochemikalien



Zellkultur & Verbrauchsmaterial



Diagnostik & molekulare Diagnostik



Laborgeräte & Service

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### Lieferung & Zahlungsart

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### Zuschläge

- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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# ACTC1 (m): 293T Lysate: sc-126392

## BACKGROUND

All eukaryotic cells express Actin, which often constitutes as much as 50% of total cellular protein. Actin filaments can form both stable and labile structures and are crucial components of microvilli and the contractile apparatus of muscle cells. While lower eukaryotes, such as yeast, have only one Actin gene, higher eukaryotes have several Actin isoforms encoded by a family of genes. At least six types of Actin are present in mammalian tissues and fall into three classes, namely  $\alpha$ -,  $\beta$ - and  $\gamma$ -Actin.  $\alpha$ -Actin expression is limited to various types of muscle, whereas  $\beta$  and  $\gamma$ -Actin are the principle constituents of filaments in other tissues. ACTC1 (Actin,  $\alpha$  cardiac muscle 1), also known as CMD1R or ACTC, is a 377 amino acid member of the  $\alpha$ -Actin class of Actin proteins. Localized to both the cytoplasm and the cytoskeleton, ACTC1 is involved in cell motility and structural integrity. Defects in the gene encoding ACTC1 are the cause of cardiomyopathy familial hypertrophic type 11 (CMH11) and cardiomyopathy dilated type 1R (CMD1R), both of which are heart disorders that are associated with a risk of sudden cardiac death.

## REFERENCES

1. Hamada, H., et al. 1982. Molecular structure and evolutionary origin of human cardiac muscle Actin gene. *Proc. Natl. Acad. Sci. USA* 79: 5901-5905.
2. Mogensen, J., et al. 1999.  $\alpha$ -cardiac Actin is a novel disease gene in familial hypertrophic cardiomyopathy. *J. Clin. Invest.* 103: R39-R43.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 102540. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
4. Bookwalter, C.S. and Trybus, K.M. 2006. Functional consequences of a mutation in an expressed human  $\alpha$ -cardiac Actin at a site implicated in familial hypertrophic cardiomyopathy. *J. Biol. Chem.* 281: 16777-16784.
5. Monserrat, L., et al. 2007. Mutation in the  $\alpha$ -cardiac Actin gene associated with apical hypertrophic cardiomyopathy, left ventricular non-compaction, and septal defects. *Eur. Heart J.* 28: 1953-1961.
6. Matsson, H., et al. 2008.  $\alpha$ -cardiac Actin mutations produce atrial septal defects. *Hum. Mol. Genet.* 17: 256-265.
7. Miller, B.M. and Trybus, K.M. 2008. Functional effects of nemaline myopathy mutations on human skeletal  $\alpha$ -Actin. *J. Biol. Chem.* 283: 19379-19388.
8. Iwasa, M., et al. 2008. Dual roles of Gln137 of Actin revealed by recombinant human cardiac muscle  $\alpha$ -Actin mutants. *J. Biol. Chem.* 283: 21045-21053.

## CHROMOSOMAL LOCATION

Genetic locus: ACTC1 (human) mapping to 15q14.

## PRODUCT

ACTC1 (m): 293T Lysate represents a lysate of mouse ACTC1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## RESEARCH USE

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

## APPLICATIONS

ACTC1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive ACTC1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

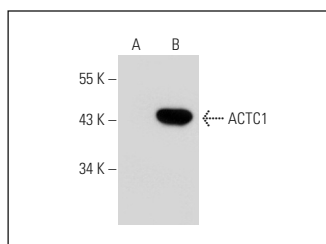
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

Muscle Actin (4i346): sc-71625 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse ACTC1 expression in ACTC1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

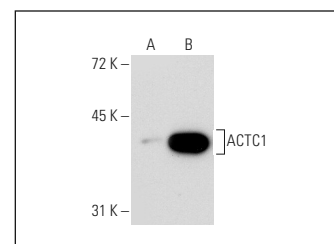
## RECOMMENDED SUPPORT REAGENTS

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™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

## DATA



Muscle Actin (4i346): sc-71625. Western blot analysis of ACTC1 expression in non-transfected: sc-117752 (A) and mouse ACTC1 transfected: sc-126392 (B) 293T whole cell lysates.



Muscle Actin (HUC1-1): sc-53141. Western blot analysis of ACTC1 expression in non-transfected: sc-117752 (A) and mouse ACTC1 transfected: sc-126392 (B) 293T whole cell lysates.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.