

TNNI3K (H-7): sc-514417



The Power to Question

BACKGROUND

TNNI3K (TNNI3-interacting kinase), also known as CARK (Cardiac ankyrin repeat kinase), is a 936 amino acid serine/threonine-protein kinase that is highly expressed in heart. Overexpression of TNNI3K leads to improved cardiac function by enhancing beating frequency and increasing contractile force and epinephrine response. TNNI3K suppresses phosphorylation of cardiac troponin I and p38/JNK-mediated apoptosis, therefore protecting the myocardium from ischemic injury. Administration of TNNI3K to mice with myocardial infarction improves cardiac performance and attenuates ventricular remodeling, suggesting that TNNI3K could be a promising target in the treatment of cardiac diseases. There are four isoforms of TNNI3K that are produced as a result of alternative splicing events.

REFERENCES

- Luft, F.C. 2003. Hearts of this ILK rely on TNNI3K, a MAPKKK that regulated TNNI3. *J. Mol. Med.* 81: 279-280.
- Zhao, Y., et al. 2003. Cloning and characterization of a novel cardiac-specific kinase that interacts specifically with cardiac troponin I. *J. Mol. Med.* 81: 297-304.
- Feng, Y., et al. 2007. AOP-1 interacts with cardiac-specific protein kinase TNNI3K and down-regulates its kinase activity. *Biochemistry* 72: 1199-1204.
- Lai, Z.F., et al. 2008. Overexpression of TNNI3K, a cardiac-specific MAP kinase, promotes P19CL6-derived cardiac myogenesis and prevents myocardial infarction-induced injury. *Am. J. Physiol. Heart Circ. Physiol.* 295: H708-H716.
- Kaski, J.P., et al. 2008. Idiopathic restrictive cardiomyopathy in children is caused by mutations in cardiac sarcomere protein genes. *Heart* 94: 1478-1484.

CHROMOSOMAL LOCATION

Genetic locus: TNNI3K (human) mapping to 1p31.1; Tnni3k (mouse) mapping to 3 H4.

SOURCE

TNNI3K (H-7) is a mouse monoclonal antibody raised against amino acids 14-313 mapping near the N-terminus of TNNI3K of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

TNNI3K (H-7) is available conjugated to agarose (sc-514417 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514417 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514417 PE), fluorescein (sc-514417 FITC), Alexa Fluor® 488 (sc-514417 AF488), Alexa Fluor® 546 (sc-514417 AF546), Alexa Fluor® 594 (sc-514417 AF594) or Alexa Fluor® 647 (sc-514417 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514417 AF680) or Alexa Fluor® 790 (sc-514417 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

TNNI3K (H-7) is recommended for detection of TNNI3K of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 TNNI3K siRNA (h): sc-78851, TNNI3K siRNA (m): sc-154542, TNNI3K shRNA Plasmid (h): sc-78851-SH, TNNI3K shRNA Plasmid (m): sc-154542-SH, TNNI3K shRNA (h) Lentiviral Particles: sc-78851-V and TNNI3K shRNA (m) Lentiviral Particles: sc-154542-V.

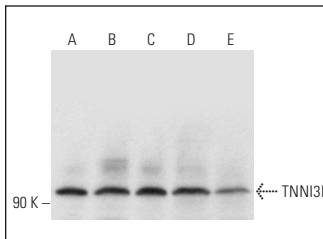
Molecular Weight of TNNI3K: 93 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, THP-1 cell lysate: sc-2238 or Hep G2 cell lysate: sc-2227.

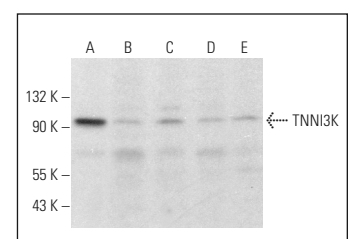
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TNNI3K (H-7): sc-514417. Western blot analysis of TNNI3K expression in HL-60 (A), K-562 (B), THP-1 (C), Hep G2 (D) and HeLa (E) whole cell lysates.



TNNI3K (H-7): sc-514417. Western blot analysis of TNNI3K expression in EOC 20 (A), c4 (B), Sol8 (C), BC3H1 (D) and L6 (E) whole cell lysates.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.