SANTA CRUZ BIOTECHNOLOGY, INC.

DMPK (C-16): sc-13613

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myotonic dystrophy protein kinase (DMPK) is a multi-domain protein kinase found in muscle that is activated in response to G protein second messengers and proteolysis. DMPK is implicated in myotonic muscular dystrophy (DM), an autosomal dominant-inherited disorder that predominately affects skeletal and cardiac muscle and causes defects in cardiac conduction. DM arises through expansion of CTG repeats in the 3'-UTR of the DMPK gene. Mutant DMPK transcripts with an extended region of CUG repeats are retained in the nucleus. These transcripts also influence the expression of the DM locus-associated homeodomain protein (DMAHP)/SIX5, to mediate in part the DM phenotype. Other substrates for DMPK include myogenin, L-type calcium channels, and Phospholemman (PLM).

REFERENCES

1. Roberts, R., et al. 1997. Altered phosphorylation and intracellular distribution of a (CUG)n triplet repeat RNA-binding protein in patients with myotonic dystrophy and in myotonin protein kinase knockout mice. Proc. Natl. Acad. Sci. USA 94: 13221-13226.
2. Berul, C.I., et al. 1999. DMPK dosage alterations result in atrioventricular conduction abnormalities in a mouse myotonic dystrophy model. J. Clin. Invest. 103: R1-R7.
3. Mounsey, J.P., et al. 2000. Phospholemman is a substrate for myotonic dystrophy protein kinase. J. Biol. Chem. 275: 23362-23367.
4. Bush, E.W., et al. 2000. Myotonic dystrophy protein kinase domains mediate localization, oligomerization, novel catalytic activity, and autoinhibition. Biochemistry 39: 8480-8490.
5. Mankodi, A., et al. 2000. Myotonic dystrophy in transgenic mice expressing an expanded CUG repeat. Science 289: 1769-1773.
6. Inukai, A., et al. 2000. Reduced expression of DMAHP/SIX5 gene in myotonic dystrophy muscle. Muscle Nerve 23: 1421-1426.

CHROMOSOMAL LOCATION

Genetic locus: DMPK (human) mapping to 19q13.32; Dmpk (mouse) mapping to 7 A3.

SOURCE

DMPK (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DMPK of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-13613 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

DMPK (C-16) is recommended for detection of DMPK variants 1-13 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 DMPK siRNA (h): sc-38993, DMPK siRNA (m): sc-38994, DMPK shRNA Plasmid (h): sc-38993-SH, DMPK shRNA Plasmid (m): sc-38994-SH, DMPK shRNA (h) Lentiviral Particles: sc-38993-V and DMPK shRNA (m) Lentiviral Particles: sc-38994-V.

Molecular Weight of DMPK: 45-70 kDa.

Positive Controls: Sol8 cell lysate: sc-2249.

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) 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.

RESEARCH USE

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

PROTOCOLS

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