SANTA CRUZ BIOTECHNOLOGY, INC.

CUG-BP1 (G-19): sc-23641

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myotonic dystrophy (DM) is an autosomal dominant neuromuscular disease that is associated with a (CTG)n repeat expansion in the 3'-untranslated region of the myotonin protein kinase gene (DMPK). CUG-BP1 and CUG-BP2 are proteins that bind specifically to (CUG)8 oligonucleotides *in vitro*. While CUG-BP1 has the major binding activity in normal cells, nuclear CUG-BP2 binding activity increases in DM cells. Both CUG-BP1 and CUG-BP2 are isoforms of a novel heterogeneous nuclear ribonucleoprotein (hnRNP), hNab50. CUG-BP1, an RNA CUG triplet repeat binding protein, regulates splicing and translation of various RNAs. Expansion of RNA CUG repeats in the DMPK in DM is associated with alterations in binding activity of CUG-BP1 as well as alterations in the translation of the C/EBPb transcription factor. CUG-BP1 is an important regulator of initiation from different AUG codons of C/EBPβ mRNA. In normal cells, CUG-BP1 up-regulates the p21 protein during differentiation by inducing the translation of p21 via binding to a GC-rich sequence located within the 5' region of p21 mRNA. In DM cells, failure to accumulate CUG-BP1 leads to a reduction of p21 and alterations in other proteins responsible for cell cycle withdrawl.

REFERENCES

1. Timchenko, L.T., Miller, J.W., Timchenko, N.A., DeVore, D.R., Datar, K.V., Liu, L., Roberts, R., Caskey, C.T. and Swanson, M.S. 1996. Identification of a (CUG)n triplet repeat RNA-binding protein and its expression in myotonic dystrophy. Nucleic Acids Res. 24: 4407-4414.
2. Timchenko, N.A., Welm, A.L., Lu, X. and Timchenko, L.T. 1999. CUG repeat binding protein (CUGBP1) interacts with the 5'-region of C/EBPβ mRNA and regulates translation of C/EBPβ isoforms. Nucleic Acids Res. 27: 4517-4525.
3. Takahashi, N., Sasagawa, N., Suzuki, K. and Ishiura, S. 2000. The CUG-binding protein binds specifically to UG dinucleotide repeats in yeast three-hybrid system. Biochem. Biophys. Res. Commun. 277: 518-523.
4. Timchenko, N.A., Cai, Z.J., Welm, A.L., Reddy, S., Ashizawa, T. and Timchenko, L.T. 2001. RNA CUG repeats sequester CUGBP1 and alter protein levels and activity of CUGBP1. J. Biol. Chem. 276: 7820-7826.
5. Timchenko, N.A., Iakova, P., Cai, Z.J., Smith, J.R. and Timchenko, L.T. 2001. Molecular basis for imparied muscle differentiation in myotonic dystrophy. Mol. Cell. Biol. 21: 6927-6938.

CHROMOSOMAL LOCATION

Genetic locus: CELF1 (human) mapping to 11p11.2; Celf1 (mouse) mapping to 2 E1.

SOURCE

CUG-BP1 (G-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CUG-BP1 of mouse origin.

STORAGE

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

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-23641 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CUG-BP1 (G-19) is recommended for detection of CUG-BP1 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).

CUG-BP1 (G-19) is also recommended for detection of CUG-BP1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CUG-BP1 siRNA (h): sc-38251, CUG-BP1 siRNA (m): sc-38252, CUG-BP1 shRNA Plasmid (h): sc-38251-SH, CUG-BP1 shRNA Plasmid (m): sc-38252-SH, CUG-BP1 shRNA (h) Lentiviral Particles: sc-38251-V and CUG-BP1 shRNA (m) Lentiviral Particles: sc-38252-V.

Molecular Weight of CUG-BP1: 56 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209, HeLa whole cell lysate: sc-2200 or 3611-RF whole cell lysate: sc-2215.

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.

MONOS Satisfaction Guaranteed

Try **CUG-BP1 (3B1): sc-20003** or **CUG-BP1/2 (B-1): sc-166095**, our highly recommended monoclonal alternatives to CUG-BP1 (G-19). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **CUG-BP1 (3B1): sc-20003**.