

CUG-BP1 (S-16): sc-21076

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/EBP β transcription factor. CUG-BP1 is an important regulator of initiation from different AUG codons of C/EBP β 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 withdrawal.

REFERENCES

1. Timchenko, L.T., et al. 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., et al. 1999. CUG repeat binding protein (CUGBP1) interacts with the 5'-region of C/EBP β mRNA and regulates translation of C/EBP β isoforms. *Nucleic Acids Res.* 27: 4517-4525.
3. Takahashi, N., et al. 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., et al. 2001. RNA CUG repeats sequester CUGBP1 and alter protein levels and activity of CUGBP1. *J. Biol. Chem.* 276: 7820-7826.

CHROMOSOMAL LOCATION

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

SOURCE

CUG-BP1 (S-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CUG-BP1 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-21076 P, (100 μ g 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

CUG-BP1 (S-16) 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), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

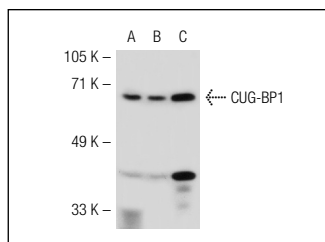
CUG-BP1 (S-16) is also recommended for detection of CUG-BP1 in additional species, including equine, canine and porcine.

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.

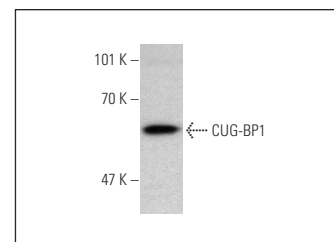
Molecular Weight of CUG-BP1: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 nuclear extract: sc-364819 or CUG-BP1 (h): 293T Lysate: sc-115438.

DATA



CUG-BP1 (S-16): sc-21076. Western blot analysis of CUG-BP1 expression in non-transfected 293T: sc-117752 (A), human CUG-BP1 transfected 293T: sc-115438 (B) and HeLa (C) whole cell lysates.



CUG-BP1 (S-16): sc-21076. Western blot analysis of CUG-BP1 expression in Hep G2 nuclear extract.

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.



Try **CUG-BP1 (3B1): sc-20003** or **CUG-BP1/2 (B-1): sc-166095**, our highly recommended monoclonal alternatives to CUG-BP1 (S-16). Also, for AC, HRP, FITC, PE, Alexa Fluor[®] 488 and Alexa Fluor[®] 647 conjugates, see **CUG-BP1 (3B1): sc-20003**.