SANTA CRUZ BIOTECHNOLOGY, INC.

CUG-BP1 (1.T.9): sc-56649

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/EBPβ 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 withdrawal.

CHROMOSOMAL LOCATION

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

SOURCE

CUG-BP1 (1.T.9) is a mouse monoclonal antibody raised against full length CUG-BP1 fusion protein of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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 (1.T.9) is recommended for detection of CUG-BP1 of mouse, rat, human, bovine and porcine origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 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.

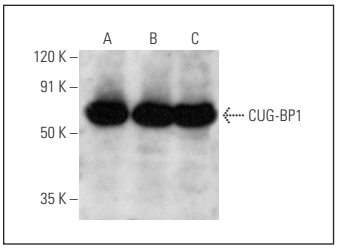
Molecular Weight of CUG-BP1: 56 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, Hep G2 cell lysate: sc-2227 or ZR-75-1 cell lysate: sc-2241.

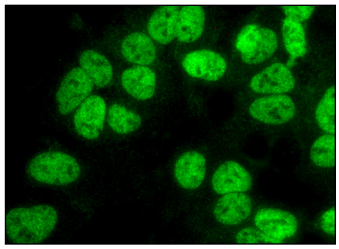
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CUG-BP1 (1.T.9): sc-56649. Western blot analysis of CUG-BP1 expression in Hep G2 (**A**), ZR-75-1 (**B**) and NIH/3T3 (**C**) whole cell lysates.



CUG-BP1 (1.T.9): sc-56649. Immunofluorescence staining of formalin-fixed Hep G2 cells showing nuclear localization.

SELECT PRODUCT CITATIONS

1. Jones, K., et al. 2012. GSK3β mediates muscle pathology in myotonic dystrophy. J. Clin. Invest. 122: 4461-4472.
2. Miotto, P.M. and Holloway, G.P. 2018. Exercise-induced reductions in mitochondrial ADP sensitivity contribute to the induction of gene expression and mitochondrial biogenesis through enhanced mitochondrial H_2O_2 emission. Mitochondrion 46: 116-122.
3. Bah, I., et al. 2020. HuR promotes miRNA-mediated upregulation of NFI-A protein expression in MDSCs during murine sepsis. Mol. Immunol. 123: 97-105.

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.

CONJUGATES

See **CUG-BP1 (3B1): sc-20003** for CUG-BP1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.