

CGGBP1 (G-12): sc-398347



The Power to Question

BACKGROUND

Fragile X syndrome is the most frequent form of inherited mental retardation and is the result of transcriptional silencing of the FMR1 (fragile X mental retardation) gene on the X chromosome. The FMR1 gene contains a distinct CpG dinucleotide repeat located in the 5'-untranslated region of the gene which, in fragile X syndrome, is substantially amplified and subject to extensive methylation and enhanced transcriptional silencing. CGGBP1 (CGG triplet repeat binding protein 1), also known as CGGBP or p20-CGGBP, is a 167 amino acid nuclear protein that influences FMR1 expression. Highly expressed in thymus, placenta, lymph nodes, cerebral cortex and cerebellum, CGGBP1 binds to the 5'-(CGG)_n-3' repeat in the promoter of the FMR1 gene and positively regulates expression of the FMR1 protein. Binding of CGGBP1 to the FMR1 promoter is inhibited by cytosine-specific DNA methylation of the protein binding motif, suggesting that CGGBP1 activity is silenced in FMR1-affected individuals.

REFERENCES

1. Verkerk, A.J., et al. 1991. Identification of a gene (FMR1) containing a CGG repeat coincident with a breakpoint cluster region exhibiting length variation in fragile X syndrome. *Cell* 65: 905-914.
2. Pieretti, M., et al. 1991. Absence of expression of the FMR1 gene in fragile X syndrome. *Cell* 66: 817-822.
3. Zhang, Y., et al. 1995. The fragile X mental retardation syndrome protein interacts with novel homologs FXR1 and FXR2. *EMBO J.* 14: 5358-5366.
4. Deissler, H., et al. 1996. Purification of nuclear proteins from human HeLa cells that bind specifically to the unstable tandem repeat (CGG)_n in the human FMR1 gene. *J. Biol. Chem.* 271: 4327-4334.
5. Eberhart, D.E., et al. 1996. The fragile X mental retardation protein is a ribonucleoprotein containing both nuclear localization and nuclear export signals. *Hum. Mol. Genet.* 5: 1083-1091.

CHROMOSOMAL LOCATION

Genetic locus: CGGBP1 (human) mapping to 3p11.1; Cggbp1 (mouse) mapping to 16 C1.3.

SOURCE

CGGBP1 (G-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 77-99 within an internal region of CGGBP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-398347 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-398347 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CGGBP1 (G-12) is recommended for detection of CGGBP1 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).

CGGBP1 (G-12) is also recommended for detection of CGGBP1 in additional species, including porcine.

Suitable for use as control antibody for CGGBP1 siRNA (h): sc-78374, CGGBP1 siRNA (m): sc-142304, CGGBP1 shRNA Plasmid (h): sc-78374-SH, CGGBP1 shRNA Plasmid (m): sc-142304-SH, CGGBP1 shRNA (h) Lentiviral Particles: sc-78374-V and CGGBP1 shRNA (m) Lentiviral Particles: sc-142304-V.

CGGBP1 (G-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

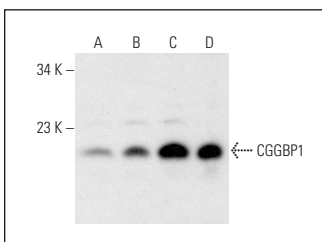
Molecular Weight of CGGBP1: 20 kDa.

Positive Controls: MDA-MB-435S whole cell lysate: sc-364184, CCRF-CEM nuclear extract: sc-2146 or CCRF-CEM cell lysate: sc-2225.

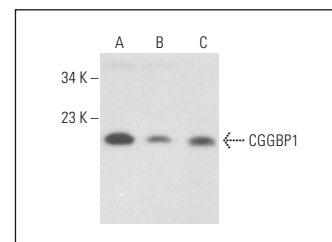
RECOMMENDED SUPPORT REAGENTS

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



CGGBP1 (G-12): sc-398347. Western blot analysis of CGGBP1 expression in CCRF-CEM (A), Jurkat (B) and MDA-MB-435S (C) whole cell lysates and CCRF-CEM nuclear extract (D).



CGGBP1 (G-12): sc-398347. Western blot analysis of CGGBP1 expression in CCRF-CEM (A), Raji (B) and WEHI-231 (C) 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.