

# CGGBP1 (G-8): sc-376482

## 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)<sub>n</sub>-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 (FMR-1) 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 FMR-1 gene in fragile X syndrome. *Cell* 66: 817-22.
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)<sub>n</sub> in the human FMR1 gene. *J. Biol. Chem.* 271: 4327-4334.

## CHROMOSOMAL LOCATION

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

## SOURCE

CGGBP1 (G-8) is a mouse monoclonal antibody raised against amino acids 1-167 representing full length CGGBP1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>1</sub> 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-376482 X, 200 µg/0.1 ml.

CGGBP1 (G-8) is available conjugated to agarose (sc-376482 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-376482 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376482 PE), fluorescein (sc-376482 FITC), Alexa Fluor® 488 (sc-376482 AF488), Alexa Fluor® 546 (sc-376482 AF546), Alexa Fluor® 594 (sc-376482 AF594) or Alexa Fluor® 647 (sc-376482 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376482 AF680) or Alexa Fluor® 790 (sc-376482 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## APPLICATIONS

CGGBP1 (G-8) 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-8) is also recommended for detection of CGGBP1 in additional species, including equine, canine and bovine.

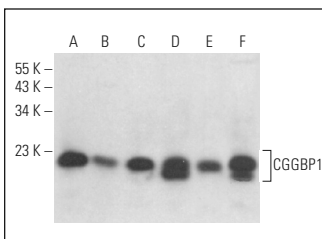
Suitable for use as control antibody for CGGBP1 siRNA (h): sc-78374, CGGBP1 siRNA (m): sc-142304, CGGBP1 shRNA Plasmid (h): sc-78374-SH, CGGBP1 shRNA Plasmid (m): sc-142304-SH, CGGBP1 shRNA (h) Lentiviral Particles: sc-78374-V and CGGBP1 shRNA (m) Lentiviral Particles: sc-142304-V.

CGGBP1 (G-8) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

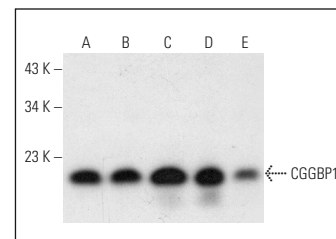
Molecular Weight of CGGBP1: 20 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, CCRF-CEM nuclear extract: sc-2146 or MDA-MB-435S whole cell lysate: sc-364184.

## DATA



CGGBP1 (G-8): sc-376482. Western blot analysis of CGGBP1 expression in Jurkat (A), MOLT-4 (B), NAMALWA (C), SH-SY5Y (D), RAW 264.7 (E) and Neuro-2A (F) whole cell lysates.



CGGBP1 (G-8): sc-376482. Western blot analysis of CGGBP1 expression in CCRF-CEM (A), Jurkat (B) and MDA-MB-435S (C) whole cell lysates and CCRF-CEM (D) and K-562 (E) nuclear extracts.

## SELECT PRODUCT CITATIONS

1. Patel, D., et al. 2019. CGGBP1 regulates CTCF occupancy at repeats. *Epigenetics Chromatin* 12: 57.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.