SANTA CRUZ BIOTECHNOLOGY, INC.

PQBP-1 siRNA (m): sc-38200

BACKGROUND

Polyglutamine(Q) tract binding protein-1 (PQBP-1) is a transcription repressor that associates with polyglutamine tract-containing transcription regulators and causative genes for neurodegenerative disorders. Hepta- and di-amino acid repeat sequences rich in polar residues are essential for PQBP-1 to interact with polyglutamine tract-containing proteins (i.e. huntingtin, androgen receptor and Brain-2). PQBP-1 contains a WWP/WW domain that binds proline-rich motifs and a C2 domain that can influence Ca^{2+}-dependent phospholipid signaling. PQBP-1 localizes to the nucleus and is present in neurons throughout the brain, with abundant levels in hippocampus, cerebellar cortex and olfactory bulb. The human PQBP-1 gene maps to chromosome Xp11.23.

REFERENCES

1. Imafuku, I., et al. 1998. Polar amino acid-rich sequences bind to polyglutamine tracts. Biochem. Biophys. Res. Commun. 253: 16-20.
2. Waragai, M., et al. 1999. PQBP-1, a novel polyglutamine tract-binding protein, inhibits transcription activation by Brn-2 and affects cell survival. Hum. Mol. Genet. 8: 977-987.
3. Komuro, A., et al. 1999. Npw38, a novel nuclear protein possessing a WW domain capable of activating basal transcription. Nucleic Acids Res. 27: 1957-1965.
4. Iwamoto, K., et al. 2000. Genomic organization and alternative transcripts of the human PQBP-1 gene. Gene 259: 69-73.
5. Waragai, M., et al. 2000. PQBP-1/Npw38, a nuclear protein binding to the polyglutamine tract, interacts with U5-15kD/dim1p via the carboxyl-terminal domain. Biochem. Biophys. Res. Commun. 273: 592-595.
6. Okazawa, H., et al. 2001. PQBP-1 (Np/PQ): a polyglutamine tract-binding and nuclear inclusion-forming protein. Brain Res. Bull. 56: 273-280.
7. Okazawa, H., et al. 2002. Interaction between mutant ataxin-1 and PQBP-1 affects transcription and cell death. Neuron 34: 701-713.
8. LocusLink Report (LocusID: 10084). http://www.ncbi.nlm. nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Pqbp1 (mouse) mapping to X A1.1.

PRODUCT

PQBP-1 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see PQBP-1 shRNA Plasmid (m): sc-38200-SH and PQBP-1 shRNA (m) Lentiviral Particles: sc-38200-V as alternate gene silencing products.

For independent verification of PQBP-1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-38200A, sc-38200B and sc-38200C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

PQBP-1 siRNA (m) is recommended for the inhibition of PQBP-1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

PQBP-1 (B-9): sc-374260 is recommended as a control antibody for monitoring of PQBP-1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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) 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.

SELECT PRODUCT CITATIONS

1. Jin, M., et al. 2021. Tau activates microglia via the PQBP1-cGAS-STING pathway to promote brain inflammation. Nat. Commun. 12: 6565.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor PQBP-1 gene expression knockdown using RT-PCR Primer: PQBP-1 (m)-PR: sc-38200-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.