SANTA CRUZ BIOTECHNOLOGY, INC.

β-centractin siRNA (m): sc-142274

BACKGROUND

The dynactin complex is a macromolecular complex that consists of 10-11 distinct subunits. This complex is critical for the function of dynein, a molecular motor protein. Dynactin plays a role in ER to Golgi transport, spindle formation, chromosome movement, axon guidance, nuclear positioning and the centripetal movement of lysosomes and endosomes. Centractin is a subunit of the dynactin complex that exists in multiple isoforms. The α isoform, also known as Actin-related protein 1 homolog A (Arp1) and previously referred to as centractin, is the most abundant isoform in the dynactin complex. The β isoform, also known as Actin-related protein 1 homolog B, shares 90% identity with the α isoform. The two isoforms, α and β, are expressed at a ratio of 15:1 respectively. The backbone filament structure of the dynactin complex (important for the arrangement of other complex proteins) is composed of 9-11 subunits of α/β-centractin.

REFERENCES

1. Clark, S.W., et al. 1995. β-centractin: characterization and distribution of a new member of the centractin family of actin-related proteins. Mol. Biol. Cell 5: 1301-1310.
2. Elsea, S.H., et al. 1999. Assignment of β-centractin (CTRN2) to human chromosome 2 bands q11.1→q11.2 with somatic cell hybrids and *in situ* hybridization. Cytogenet. Cell Genet. 84: 48-49.
3. Bingham, J.B., et al. 1999. Self-regulated polymerization of the actin-related protein Arp1. Curr. Biol. 9: 223-226.
4. Eaton, B.A., et al. 2002. Dynactin is necessary for synapse stabilization. Neuron 34: 729-741.
5. Cuadrado-Tejedor, M., et al. 2005. Changes in cytoskeletal gene expression linked to MPTP-treatment in mice. Neurobiol. Dis. 20: 666-672.
6. Hodgkinson, J.L., et al. 2005. Three-dimensional reconstruction of the dynactin complex by single-particle image analysis. Proc. Natl. Acad. Sci. USA 102: 3667-3672.

CHROMOSOMAL LOCATION

Genetic locus: Actr1b (mouse) mapping to 1 B.

PRODUCT

β-centractin 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 β-centractin shRNA Plasmid (m): sc-142274-SH and β-centractin shRNA (m) Lentiviral Particles: sc-142274-V as alternate gene silencing products.

For independent verification of β-centractin (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-142274A, sc-142274B and sc-142274C.

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

β-centractin siRNA (m) is recommended for the inhibition of β-centractin 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

α/β-centractin (A-7): sc-376010 is recommended as a control antibody for monitoring of β-centractin 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor β-centractin gene expression knockdown using RT-PCR Primer: β-centractin (m)-PR: sc-142274-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.