SANTA CRUZ BIOTECHNOLOGY, INC.

BICD2 siRNA (m): sc-141701

BACKGROUND

BICD2 [bicaudal D homolog 2 *(Drosophila)),* whose alternative names include protein bicaudal D homolog 2, Bic-D 2, KIAA0699 or bA526D8.1, is one of 2 human homologs of *Drosophila* BICD and consists of 824 amino acids. BICD2 is ubiquitously expressed and localizes to the Golgi apparatus, cytoplasm and cytoskeleton. BICD2 colocalizes with Rab 6A on the *trans*-Golgi network (TGN) and on cytoplasmic vesicles, and is known to recruit the dynein-dynactin motor complex to regulate coat complex coatomer protein I (COPI)-independent Golgi-to-endoplasmic reticulum vacuolar transport. BICD2 is phosphorylated by NEK9 *in vitro,* and interacts with Dynactin 2. Existing as two isoforms due to alternative splicing events, BICD2 is encoded by a gene mapping to human chromosome 9.

REFERENCES

1. Ishikawa, K., et al. 1998. Prediction of the coding sequences of unidentified human genes. X. The complete sequences of 100 new cDNA clones from brain which can code for large proteins *in vitro.* DNA Res. 5: 169-176.
2. Hoogenraad, C.C., et al. 2001. Mammalian Golgi-associated Bicaudal-D2 functions in the dynein-dynactin pathway by interacting with these complexes. EMBO J. 20: 4041-4054.
3. Holland, P.M., et al. 2002. Purification, cloning, and characterization of Nek8, a novel NIMA-related kinase, and its candidate substrate BICD2. J. Biol. Chem. 277: 16229-16240.
4. Matanis, T., et al. 2002. Bicaudal-D regulates COPI-independent Golgi-ER transport by recruiting the dynein-dynactin motor complex. Nat. Cell Biol. 4: 986-992.
5. Hoogenraad, C.C., et al. 2003. Bicaudal D induces selective dynein-mediated microtubule minus end-directed transport. EMBO J. 22: 6004-6015.
6. Fuchs, E., et al. 2005. Assay and properties of rab6 interaction with dynein-dynactin complexes. Meth. Enzymol. 403: 607-618.

CHROMOSOMAL LOCATION

Genetic locus: Bicd2 (mouse) mapping to 13 A5.

PRODUCT

BICD2 siRNA (m) is a pool of 2 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 BICD2 shRNA Plasmid (m): sc-141701-SH and BICD2 shRNA (m) Lentiviral Particles: sc-141701-V as alternate gene silencing products.

For independent verification of BICD2 (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-141701A and sc-141701B.

PROTOCOLS

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

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

BICD2 siRNA (m) is recommended for the inhibition of BICD2 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

BICD2 (E-12): sc-393631 is recommended as a control antibody for monitoring of BICD2 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 BICD2 gene expression knockdown using RT-PCR Primer: BICD2 (m)-PR: sc-141701-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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