SANTA CRUZ BIOTECHNOLOGY, INC.

CLIP-115 siRNA (h): sc-60475

BACKGROUND

Williams syndrome (WS) is a developmental disorder characterized by cardiovascular problems, dysmorphic features, mental retardation or learning difficulties and several typical behavioral and neurological abnormalities. In Williams syndrome patients, a heterozygous deletion is present in a region on chromosome 7q11.23 (the Williams syndrome critical region), which spans approximately 20 genes. This region comprises the CYLN2 gene, which encodes the cytoplasmic linker protein of (CLIP-115). CLIP-115 is a microtubule-binding protein that is abundantly expressed in the brain. Mice with haploinsufficiency for the CYLN2 gene have features similar to that of WS, including mild growth deficiency, brain abnormalities, hippocampal dysfunction and particular deficits in motor coordination.

REFERENCES

1. Hoogenraad, C.C., et al. 1998. The murine CYLN2 gene: genomic organization, chromosome localization, and comparison to the human gene that is located within the 7q11.23 Williams syndrome critical region. Genomics 53: 348-358.
2. Donnai, D., et al. 2001. Williams syndrome: from genotype through to the cognitive phenotype. Am. J. Med. Genet. 97: 164-171.
3. Hoogenraad, C.C., et al. 2002. Targeted mutation of Cyln2 in the Williams syndrome critical region links CLIP-115 haploinsufficiency to neurodevelopmental abnormalities in mice. Nat. Genet. 32: 116-127.
4. Galaburda, A.M., et al. 2003. Williams syndrome. A summary of cognitive, electrophysiological, anat microanatomical and genetic findings. Rev. Neurol. 1: S132-S137.
5. Hoogenraad, C.C., et al. 2004. LIMK1 and CLIP-115: linking cytoskeletal defects to Williams syndrome. Bioessays 26: 141-150.
6. Meyer-Lindenberg, A., et al. 2005. Functional, structural, and metabolic abnormalities of the hippocampal formation in Williams syndrome. J. Clin. Invest. 115: 1888-1895.
7. Meyer-Lindenberg, A., et al. 2006. Neural mechanisms in Williams syndrome: a unique window to genetic influences on cognition and behaviour. Nat. Rev. Neurosci. 7: 380-393.

CHROMOSOMAL LOCATION

Genetic locus: CLIP2 (human) mapping to 7q11.23.

PRODUCT

CLIP-115 siRNA (h) 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 CLIP-115 shRNA Plasmid (h): sc-60475-SH and CLIP-115 shRNA (h) Lentiviral Particles: sc-60475-V as alternate gene silencing products.

For independent verification of CLIP-115 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60475A, sc-60475B and sc-60475C.

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

CLIP-115 siRNA (h) is recommended for the inhibition of CLIP-115 expression in human 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

CLIP-115 (14): sc-135869 is recommended as a control antibody for monitoring of CLIP-115 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 CLIP-115 gene expression knockdown using RT-PCR Primer: CLIP-115 (h)-PR: sc-60475-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.

PROTOCOLS

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