SANTA CRUZ BIOTECHNOLOGY, INC.

CHIC2 siRNA (m): sc-105202

BACKGROUND

CHIC2 (Cysteine-rich hydrophobic domain 2 protein), also known as BTL (BrX-like translocated in leukemia) and BTL/ETV6 fusion gene, is a 165 amino acid membrane protein whose gene is affected in a chromosomal translocation t(4;12)(q11;p13) occurring in acute myeloid leukemias (AML). CHIC2 is associated with the plasma membrane and vesicular structures, suggesting that it plays a role in regulating exocytosis. The cysteine-rich hydrophobic motif of CHIC2 contains cysteines that are palmitoylated, which is required for membrane association. In AML, the CHIC2 gene recombines with the TEL gene, resulting in a fusion protein containing the complete helix-loop-helix (HLH) and ETS DNA binding domains of TEL, but is transcribed via the CHIC2 promoter. Frequently, in systemic mast cell disease with associated eosinophilia, the gene encoding CHIC2 is deleted and a FIP1L1-PDGFR-α rearrangement is observed, a gene fusion which results in a constitutively active PDGFR-α.

REFERENCES

1. Cools, J., et al. 1999. Fusion of a novel gene, BTL, to ETV6 in acute myeloid leukemias with a t(4;12)(q11-q12;p13). Blood 94: 1820-1824.
2. Cools, J., et al. 2001. A new family of small, palmitoylated, membrane-associated proteins, characterized by the presence of a cysteine-rich hydrophobic motif. FEBS Lett. 492: 204-209.
3. Pardanani, A., et al. 2003. CHIC2 deletion, a surrogate for FIP1L1-PDGFRA fusion, occurs in systemic mastocytosis associated with eosinophilia and predicts response to imatinib mesylate therapy. Blood 102: 3093-3096.
4. Kuchenbauer, F., et al. 2005. A rare case of acute myeloid leukemia with a CHIC2-ETV6 fusiongen and multiple other molecular aberrations. Leukemia 19: 2366-2368.
5. Holtkamp, N., et al. 2007. Characterization of the amplicon on chromosomal segment 4q12 in glioblastoma multiforme. Neurooncology 9: 291-297.
6. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 604332. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Fink, S.R., et al. 2009. Validation of a new three-color fluorescence *in situ* hybridization (FISH) method to detect CHIC2 deletion, FIP1L1/PDGFRA fusion and PDGFRA translocations. Leuk. Res. 33: 843-846.

CHROMOSOMAL LOCATION

Genetic locus: Chic2 (mouse) mapping to 5 C3.3.

PRODUCT

CHIC2 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 CHIC2 shRNA Plasmid (m): sc-105202-SH and CHIC2 shRNA (m) Lentiviral Particles: sc-105202-V as alternate gene silencing products.

For independent verification of CHIC2 (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-105202A, sc-105202B and sc-105202C.

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

CHIC2 siRNA (m) is recommended for the inhibition of CHIC2 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

CHIC1/2 (B-11): sc-515175 is recommended as a control antibody for monitoring of CHIC2 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 CHIC2 gene expression knockdown using RT-PCR Primer: CHIC2 (m)-PR: sc-105202-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.