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SANTA CRUZ BIOTECHNOLOGY, INC.

HIRA siRNA (m): sc-44347

BACKGROUND

HIRA is the human homolog of yeast Hir1p and Hir2p and is a widely expressed nuclear protein involved in cell cycle regulation. Specifically, HIRA is essential during development, possibly through the control of specific gene transcription programs. During development, HIRA is highly expressed in regions that contain neural crest cells. Cyclin dependent kinase 2 (Cdk-2) and Cyclin A bind with HIRA at an RXL motif which results in phosphorylation of the substrate at Thr 555. Ectopic expression of HIRA results in cell cycle arrest in S phase. HIRA also contains seven copies of a WD repeat and exhibits histone binding properties, suggesting that it may function as a regulator of histone gene expression. The gene encoding the 1,017 amino acid HIRA maps to human chromosome 22q11, an area known to be the critical region of DiGeorge syndrome (DGS). DGS is a congenital disease characterized by defects in tissues and organs, whose development depends on cell populations derived from the neural crest.

REFERENCES

1. Halford, S., et al. 1993. Isolation of a putative transcriptional regulator from the region of 22q11 deleted in DiGeorge syndrome, Shprintzen syndrome and familial congenital heart disease. Hum. Mol. Genet. 12: 2099-2107.
2. Lamour, V., et al. 1995. A human homolog of the *S. cerevisiae* HIR1 and HIR2 transcriptional repressors cloned from the DiGeorge syndrome critical region. Hum. Mol. Genet. 5: 791-799.
3. Lorain, S., et al. 1996. Structural organization of the WD repeat protein-encoding gene HIRA in the DiGeorge syndrome critical region of human chromosome 22. Genome Res. 1: 43-50.
4. Farrell, M.J., et al. 1999. HIRA, a DiGeorge syndrome candidate gene, is required for cardiac outflow tract septation. J. Clin. Invest. 12: 1509-1517.
5. De Lucia, F., et al. 2001. Subnuclear localization and mitotic phosphorylation of HIRA, the human homologue of *Saccharomyces cerevisiae* transcriptional regulators Hir1p/Hir2p. Biochem. J. 358: 447-455.
6. Hall, C., et al. 2001. HIRA, the human homologue of yeast Hir1p and Hir2p, is a novel cyclin cdk-2 substrate whose expression blocks S phase progression. Mol. Cell. Biol. 5: 1854-1865.

CHROMOSOMAL LOCATION

Genetic locus: Hira (mouse) mapping to 16 A3.

PRODUCT

HIRA 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 HIRA shRNA Plasmid (m): sc-44347-SH and HIRA shRNA (m) Lentiviral Particles: sc-44347-V as alternate gene silencing products.

For independent verification of HIRA (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-44347A, sc-44347B and sc-44347C.

SSTORAGE 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

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

HIRA (374C6a): sc-130636 is recommended as a control antibody for monitoring of HIRA 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HIRA gene expression knockdown using RT-PCR Primer: HIRA (m)-PR: sc-44347-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.