SANTA CRUZ BIOTECHNOLOGY, INC.

H1FOO siRNA (h): sc-78002

BACKGROUND

Eukaryotic Histones are basic and water soluble nuclear proteins that form hetero-octameric nucleosome particles by wrapping 146 base pairs of DNA in a left-handed super-helical turn sequentially to form chromosomal fibers. Two molecules of each of the four core Histones (Histone H2A, H2B, H3, and H4) form the octamer, which consists of two H2A-H2B dimers and two H3-H4 dimers that are nearly symmetrical by tertiary structure. Over 80% of nucleosomes contain the linker Histone H1, derived from an intronless gene, that interacts with linker DNA between nucleosomes and mediates compaction into higher order chromatin. H1FOO (H1 histone family, member 0, oocyte-specific), also known as OSH1, is a 346 amino acid oocyte-specific Histone that localizes to both the nucleus and the cytoplasm. Expressed as multiple alternatively spliced isoforms, H1FOO is thought to play an important role in gene control during oogenesis and early embryogenesis and is crucial for meiotic maturation of germinal vesicle-stage oocytes.

REFERENCES

1. Eick, S., et al. 1989. Human H1 histones: conserved and varied sequence elements in two H1 subtype genes. Eur. J. Cell Biol. 49: 110-115.
2. Marzluff, W.F., et al. 2002. The human and mouse replication-dependent histone genes. Genomics 80: 487-498.
3. Tanaka, Y., et al. 2003. Structure and expression of the human oocyte-specific histone H1 gene elucidated by direct RT-nested PCR of a single oocyte. Biochem. Biophys. Res. Commun. 304: 351-357.
4. Gao, S., et al. 2004. Rapid H1 linker histone transitions following fertilization or somatic cell nuclear transfer: evidence for a uniform developmental program in mice. Dev. Biol. 266: 62-75.
5. Teranishi, T., et al. 2004. Rapid replacement of somatic linker histones with the oocyte-specific linker histone H1foo in nuclear transfer. Dev. Biol. 266: 76-86.
6. Tanaka, M., et al. 2005. H1FOO is coupled to the initiation of oocytic growth. Biol. Reprod. 72: 135-142.

CHROMOSOMAL LOCATION

Genetic locus: H1FOO (human) mapping to 3q22.1.

PRODUCT

H1FOO 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 H1FOO shRNA Plasmid (h): sc-78002-SH and H1FOO shRNA (h) Lentiviral Particles: sc-78002-V as alternate gene silencing products.

For independent verification of H1FOO (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-78002A, sc-78002B and sc-78002C.

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

H1FOO siRNA (h) is recommended for the inhibition of H1FOO 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor H1FOO gene expression knockdown using RT-PCR Primer: H1FOO (h)-PR: sc-78002-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.