SANTA CRUZ BIOTECHNOLOGY, INC.

$POLA_2$ siRNA (h): sc-96906

BACKGROUND

DNA polymerase α is an enzyme complex composed of four subunits: DNA primase large subunit, DNA primase small subunit and DNA polymerase subunits A and B. The complex is assembled during the cell cycle and is an essential component of DNA replication. $POLA_2$, also known as DNA polymerase subunit α B, is a 598 amino acid member of the DNA polymerase α family of proteins. Incorporation of $POLA_2$ into the 4 subunit enzyme complex is accomplished via the 250 amino acid N-terminal domain of the $POLA_2$ protein. At the early stage of chromosomal DNA replication, $POLA_2$ couples the primase/polymerase complex to the replication machinery. $POLA_2$ is localized to the nucleus and may be phosphorylated at the G_2/M phase of the cell cycle.

REFERENCES

1. Huang, D., et al. 2001. E2F mediates induction of the Sp1-controlled promoter of the human DNA polymerase ε B-subunit gene POLE2. Nucleic Acids Res. 29: 2810-2821.
2. Lee, J.B., et al. 2006. DNA primase acts as a molecular brake in DNA replication. Nature 439: 621-624.
3. Masuda, Y., et al. 2006. Role of single-stranded DNA in targeting REV1 to primer termini. J. Biol. Chem. 281: 24314-24321.
4. De Falco, M., et al. 2007. The human GINS complex binds to and specifically stimulates human DNA polymerase α-primase. EMBO Rep. 8: 99-103.
5. Shultz, R.W., et al. 2007. Genome-wide analysis of the core DNA replication machinery in the higher plants *Arabidopsis* and rice. Plant Physiol. 144: 1697-1714.
6. Berquist, B.R., et al. 2007. Essential and non-essential DNA replication genes in the model halophilic *Archaeon, Halobacterium sp.* NRC-1. BMC Genet. 8: 31.

CHROMOSOMAL LOCATION

Genetic locus: POLA2 (human) mapping to 11q13.1.

PRODUCT

$POLA_2$ 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 $POLA_2$ shRNA Plasmid (h): sc-96906-SH and $POLA_2$ shRNA (h) Lentiviral Particles: sc-96906-V as alternate gene silencing products.

For independent verification of $POLA_2$ (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-96906A, sc-96906B and sc-96906C.

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.

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

$POLA_2$ siRNA (h) is recommended for the inhibition of $POLA_2$ 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 $POLA_2$ gene expression knockdown using RT-PCR Primer: $POLA_2$ (h)-PR: sc-96906-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.