



DNA pol ν siRNA (h): sc-89311

BACKGROUND

DNA replication, recombination and repair, all of which are necessary for genomic stability, require the presence of exonucleases. In DNA replication, these enzymes are involved in the processing of Okazaki fragments, whereas in DNA repair, they function to excise damaged DNA fragments and correct recombinational mismatches. These exonucleases include the family of DNA polymerases. DNA pol α , β , δ and ϵ are involved in DNA replication and repair. DNA pol ν (DNA polymerase ν), also known as POLN, is a 900 amino acid nuclear protein belonging to the DNA polymerase type-A family that is highly expressed in heart and testis with lower levels found in skeletal muscle. Existing as two alternatively spliced isoforms, DNA pol ν is involved in the repair of DNA cross-links and is encoded by a gene located on human chromosome 4.

REFERENCES

- Li, J.J. and Alberts, B.M. 1992. DNA replication. Eukaryotic initiation rites. *Nature* 357: 114-115.
- Wood, R.D. 1999. DNA repair. Variants on a theme. *Nature* 399: 639-640.
- Marini, F., et al. 2003. POLN, a nuclear PolA family DNA polymerase homologous to the DNA cross-link sensitivity protein Mus308. *J. Biol. Chem.* 278: 32014-32019.
- Arana, M.E., et al. 2007. A unique error signature for human DNA polymerase ν . *DNA Repair* 6: 213-223.
- Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 610887. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Zietlow, L., et al. 2009. Evidence for the involvement of human DNA polymerase N in the repair of DNA interstrand cross-links. *Biochemistry* 48: 11817-11824.
- Moldovan, G.L., et al. 2010. DNA polymerase POLN participates in cross-link repair and homologous recombination. *Mol. Cell. Biol.* 30: 1088-1096.

CHROMOSOMAL LOCATION

Genetic locus: POLN (human) mapping to 4p16.3.

PRODUCT

DNA pol ν 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see DNA pol ν shRNA Plasmid (h): sc-89311-SH and DNA pol ν shRNA (h) Lentiviral Particles: sc-89311-V as alternate gene silencing products.

For independent verification of DNA pol ν (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-89311A, sc-89311B and sc-89311C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

DNA pol ν siRNA (h) is recommended for the inhibition of DNA pol ν 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 μ M in 66 μ l. 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 DNA pol ν gene expression knockdown using RT-PCR Primer: DNA pol ν (h)-PR: sc-89311-PR (20 μ l). 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.