SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol λ siRNA (m): sc-37788

BACKGROUND

DNA polymerase λ (pol λ), also designated DNA polymerase κ or pol β2, is a low-fidelity polymerase which plays a role in both spontaneous and DNA damage-induced mutagenesis. Encoded by the POLL gene, pol λ is a member of the DNA polymerase type-X family. Pol λ extends primer-terminal mispairs opposite nondamaged DNA templates, suggesting that it may assist in extending mismatched base pairs during normal DNA replication. In addition, pol λ may play a role in the mutagenic bypass of T-T dimers. Proliferating cell nuclear antigen (PCNA), a protein essential to DNA replication, interacts with pol λ and thus influences the ability of pol λ to synthesize DNA.

REFERENCES

1. Zhang, Y., et al. 2000. Human DNA polymerase κ synthesizes DNA with extraordinarily low fidelity. Nucleic Acids Res. 28: 4147-4156.
2. Ohashi, E., et al. 2000. Fidelity and processivity of DNA synthesis by DNA polymerase κ, the product of the human DINB1 gene. J. Biol. Chem. 275: 39678-39684.
3. O-Wang, J., et al. 2001. DNA polymerase κ, implicated in spontaneous and DNA damage-induced mutagenesis, is overexpressed in lung cancer. Cancer Res. 61: 5366-5369.
4. Paunesku, T., et al. 2001. Proliferating cell nuclear antigen (PCNA): ringmaster of the genome. Int. J. Radiat. Biol. 77: 1007-1021.
5. Ogi, T., et al. 2001. Expression of human and mouse genes encoding pol κ: testis-specific developmental regulation and AhR-dependent inducible transcription. Genes Cells 6: 943-953.
6. Washington, M.T., et al. 2002. Human DINB1-encoded DNA polymerase κ is a promiscuous extender of mispaired primer termini. Proc. Natl. Acad. Sci. USA 99: 1910-1914.
7. Haracska, L., et al. 2002. Stimulation of DNA synthesis activity of human DNA polymerase κ by PCNA. Mol. Cell. Biol. 22: 784-791.

CHROMOSOMAL LOCATION

Genetic locus: Poll (mouse) mapping to 19 C3.

PRODUCT

DNA pol λ 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 DNA pol λ shRNA Plasmid (m): sc-37788-SH and DNA pol λ shRNA (m) Lentiviral Particles: sc-37788-V as alternate gene silencing products.

For independent verification of DNA pol λ (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-37788A, sc-37788B and sc-37788C.

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

DNA pol λ siRNA (m) is recommended for the inhibition of DNA pol λ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DNA pol λ gene expression knockdown using RT-PCR Primer: DNA pol λ (m)-PR: sc-37788-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.