SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol β (K-16): sc-5927

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 δ and DNA pol ε are multisubunit enzymes, with DNA pol δ consisting of two subunits-p125, which interacts with the sliding DNA clamp protein PCNA, and p50. The nuclear-encoded DNA pol γ is the only DNA polymerase required for the replication of the mitochondrial DNA. DNA pol ζ is ubiquitously expressed in various tissues and mediates the cellular mechanism of damage-induced mutagenesis. DNA pol θ is a DNA polymerase-helicase that binds ATP and is involved in the repair of interstrand crosslinks.

REFERENCES

1. Bambara, R.A. and Jessee, C.B. 1991. Properties of DNA polymerases δ and ε, and their roles in eukaryotic DNA replication. Biochim. Biophys. Acta 1088: 11-24.
2. Li, J.J. and Alberts, B.M. 1992. DNA replication. Eukaryotic initiation rites. Nature 357: 114-115.
3. Ropp, P.A. and Copeland, W.C. 1996. Cloning and characterization of the human mitochondrial DNA polymerase, DNA polymerase γ. Genomics 36: 449-458.
4. Kolodner, R.D. and Marsischky, G.T. 1999. Eukaryotic DNA mismatch repair. Curr. Opin. Genet. Dev. 9: 89-96.
5. Wood, R.D. 1999. DNA repair: Variants on a theme. Nature 399: 639-640.
6. Diede, S.J. and Gottschling, D.E. 1999. Telomerase-mediated telomere addition *in vivo* requires DNA primase and DNA polymerases α and δ. Cell 99: 723-733.

CHROMOSOMAL LOCATION

Genetic locus: POLB (human) mapping to 8p11.21; Polb (mouse) mapping to 8 A2.

SOURCE

DNA pol β (K-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DNA pol β of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-5927 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DNA pol β (K-16) is recommended for detection of DNA pol β of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

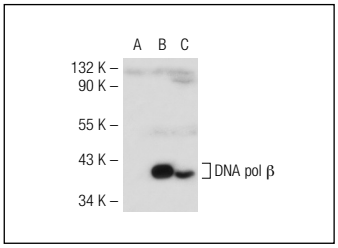
DNA pol β (K-16) is also recommended for detection of DNA pol β in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for DNA pol β siRNA (h): sc-37773, DNA pol β siRNA (m): sc-37774, DNA pol β shRNA Plasmid (h): sc-37773-SH, DNA pol β shRNA Plasmid (m): sc-37774-SH, DNA pol β shRNA (h) Lentiviral Particles: sc-37773-V and DNA pol β shRNA (m) Lentiviral Particles: sc-37774-V.

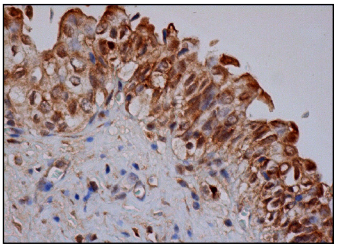
Molecular Weight of DNA pol β: 39 kDa.

Positive Controls: DNA pol β (h): 293T Lysate: sc-111735, Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

DATA



DNA pol β (K-16): sc-5927. Western blot analysis of DNA pol β expression in non-transfected: sc-117752 (**A**) and human DNA pol β transfected: sc-111735 (**B**) 293T whole cell lysates and Jurkat nuclear extract (**C**).



DNA pol β (K-16): sc-5927. Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear and cytoplasmic staining of urothelial cells.

SELECT PRODUCT CITATIONS

1. Tan, X.H., et al. 2005. Frequent mutation related with overexpression of DNA polymerase β in primary tumors and precancerous lesions of human stomach. Cancer Lett. 220: 101-114.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

MONOS Satisfaction Guaranteed

Try **DNA pol β (D-11): sc-376581**, our highly recommended monoclonal alternative to DNA pol β (K-16).