SANTA CRUZ BIOTECHNOLOGY, INC.

DNA pol ε (93H3A): sc-56655

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 inter-strand crosslinks.

REFERENCES

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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.
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CHROMOSOMAL LOCATION

Genetic locus: POLE (human) mapping to 12q24.33; Pole (mouse) mapping to 5 F.

SOURCE

DNA pol ε (93H3A) is a mouse monoclonal antibody raised against amino acids 1-176 of DNA pol ε of human origin.

STORAGE

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

PRODUCT

Each vial contains 50 µg IgG_1 in 500 µl of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DNA pol ε (93H3A) is recommended for detection of DNA pol ε of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)]; non cross-reactive with DNA Polymerase α or β.

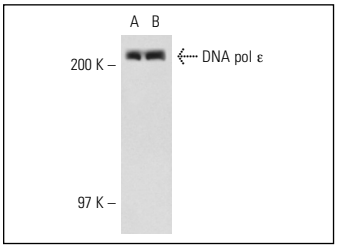
Molecular Weight of DNA pol ε: 258 kDa.

Positive Controls: Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

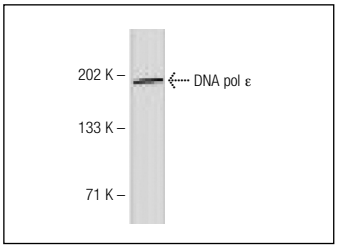
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



DNA pol ε (93H3A): sc-56655. Western blot analysis of DNA pol ε expression in Jurkat (**A**) and K-562 (**B**) nuclear extracts.



DNA pol ε (93H3A): sc-56655. Western blot analysis of DNA pol ε expression in 293T whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.