

# DNA pol $\beta$ (SPM177): sc-56378

## 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  $\alpha$ ,  $\beta$ ,  $\delta$  and  $\epsilon$  are involved in DNA replication and repair. DNA pol  $\delta$  and DNA pol  $\epsilon$  are multisubunit enzymes, with DNA pol  $\delta$  consisting of two subunits—p125, which interacts with the sliding DNA clamp protein PCNA, and p50. The nuclear-encoded DNA pol  $\gamma$  is the only DNA polymerase required for the replication of the mitochondrial DNA. DNA pol  $\zeta$  is ubiquitously expressed in various tissues and mediates the cellular mechanism of damage-induced mutagenesis. DNA pol  $\theta$  is a DNA polymerase-helicase that binds ATP and is involved in the repair of inter-strand crosslinks.

## REFERENCES

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- Sharief, F.S., Vojta, P.J., Ropp, P.A. and Copeland, W.C. 1999. Cloning and chromosomal mapping of the human DNA polymerase  $\theta$  (POLQ), the eighth human DNA polymerase. *Genomics* 59: 90-96.

## CHROMOSOMAL LOCATION

Genetic locus: POLB (human) mapping to 8p11.2; Polb (mouse) mapping to 8 A2.

## SOURCE

DNA pol  $\beta$  (SPM177) is a mouse monoclonal antibody raised against DNA pol  $\beta$  of human origin.

## PRODUCT

Each vial contains IgG<sub>2a</sub> in 250  $\mu$ l of PBS with < 0.1% sodium azide.

## APPLICATIONS

DNA pol  $\beta$  (SPM177) is recommended for detection of DNA pol  $\beta$  of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:10-1:200), immunoprecipitation [10-20  $\mu$ l per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution to be determined by researcher, dilution range 1:10-1:200) and immunohistochemistry (including paraffin-embedded sections) (starting dilution to be determined by researcher, dilution range 1:10-1:200).

Suitable for use as control antibody for DNA pol  $\beta$  siRNA (h): sc-37773.

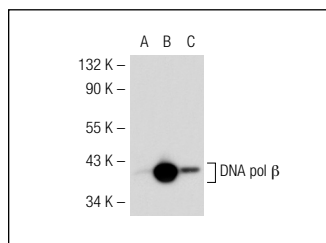
Molecular Weight of DNA pol  $\beta$ : 39 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, Jurkat nuclear extract: sc-2132 or K-562 nuclear extract: sc-2130.

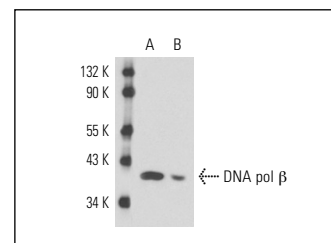
## RECOMMENDED SECONDARY REAGENTS

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). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

## DATA



DNA pol  $\beta$  (SPM177): sc-56378. Western blot analysis of DNA pol  $\beta$  expression in non-transfected: sc-117752 (A) and human DNA pol  $\beta$  transfected: sc-111735 (B) nuclear extracts.



DNA pol  $\beta$  (SPM177): sc-56378. Western blot analysis of DNA pol  $\beta$  expression in K-562 (A) and Jurkat (B) nuclear extracts.

## STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

## RESEARCH USE

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