

DNA pol γ 2 (T-16): sc-160290

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 γ 2 (polymerase (DNA directed), γ 2, accessory subunit), also known as mitochondrial DNA polymerase accessory subunit, POLB, HP55, PEOA4, POLGB, MTPOLB, POLG-BETA or POLG2, is a 485 amino acid subunit of mitochondrial DNA pol γ . DNA pol γ 2 enhances DNA binding and promotes processive DNA synthesis. Defects in the gene encoding DNA pol γ 2 are the cause of PEOA4 (progressive external ophthalmoplegia with mitochondrial DNA deletions autosomal dominant type 4).

REFERENCES

1. Wang, Y., et al. 1997. Accessory subunit of mitochondrial DNA polymerase from *Drosophila* embryos. Cloning, molecular analysis, and association in the native enzyme. *J. Biol. Chem.* 272: 13640-13646.
2. Carrodeguas, J.A. and Bogenhagen, D.F. 2000. Protein sequences conserved in prokaryotic aminoacyl-tRNA synthetases are important for the activity of the processivity factor of human mitochondrial DNA polymerase. *Nucleic Acids Res.* 28: 1237-1244.
3. Carrodeguas, J.A., et al. 2001. Crystal structure and deletion analysis show that the accessory subunit of mammalian DNA polymerase γ , Pol γ B, functions as a homodimer. *Mol. Cell* 7: 43-54.
4. Longley, M.J., et al. 2006. Mutant POLG2 disrupts DNA polymerase γ subunits and causes progressive external ophthalmoplegia. *Am. J. Hum. Genet.* 78: 1026-1034.
5. Yakubovskaya, E., et al. 2006. Functional human mitochondrial DNA polymerase γ forms a heterotrimer. *J. Biol. Chem.* 281: 374-382.

CHROMOSOMAL LOCATION

Genetic locus: POLG2 (human) mapping to 17q24.1; Polg2 (mouse) mapping to 11 E1.

SOURCE

DNA pol γ 2 (T-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DNA pol γ 2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-160290 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-160290 X, 200 μ g/0.1 ml.

APPLICATIONS

DNA pol γ 2 (T-16) is recommended for detection of DNA pol γ 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with DNA pol γ .

Suitable for use as control antibody for DNA pol γ 2 siRNA (h): sc-93686, DNA pol γ 2 siRNA (m): sc-155884, DNA pol γ 2 shRNA Plasmid (h): sc-93686-SH, DNA pol γ 2 shRNA Plasmid (m): sc-155884-SH, DNA pol γ 2 shRNA (h) Lentiviral Particles: sc-93686-V and DNA pol γ 2 shRNA (m) Lentiviral Particles: sc-155884-V.

DNA pol γ 2 (T-16) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

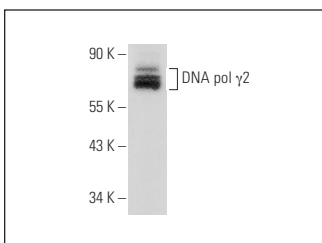
Molecular Weight of DNA pol γ 2: 55 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



DNA pol γ 2 (T-16): sc-160290. Western blot analysis of DNA pol γ 2 expression in HeLa whole cell lysate.

STORAGE

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

RESEARCH USE

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