

# POLDIP2 (S-20): sc-82999

## BACKGROUND

POLDIP2 (polymerase (DNA-directed),  $\delta$  interacting protein 2), also known as POLD4 or PDIP38, is a 368 amino acid protein that localizes to the nucleus and contains one apaG domain. Interacting with PCNA and DNA pol  $\delta$  2, POLDIP2 is thought to influence DNA replication and cellular proliferation events, specifically by inhibiting the activity of DNA pol subunits. Human POLDIP2 shares 95% sequence identity with its mouse counterpart, suggesting a conserved role between species. The gene encoding POLDIP2 maps to human chromosome 17, which comprises over 2.5% of the human genome and encodes over 1,200 genes. Two key tumor suppressor genes are associated with chromosome 17, namely, p53 and BRCA1. Tumor suppressor p53 is necessary for maintenance of cellular genetic integrity by moderating cell fate through DNA repair versus cell death. Malfunction or loss of p53 expression is associated with malignant cell growth and Li-Fraumeni syndrome. Like p53, BRCA1 is directly involved in DNA repair, though specifically it is recognized as a genetic determinant of early onset breast cancer and predisposition to cancers of the ovary, colon, prostate gland and fallopian tubes.

## REFERENCES

- Hartley, J.L., Temple, G.F. and Brasch, M.A. 2000. DNA cloning using *in vitro* site-specific recombination. *Genome Res.* 10: 1788-1795.
- Liu, L., Rodriguez-Belmonte, E.M., Mazloum, N., Xie, B. and Lee, M.Y. 2003. Identification of a novel protein, PDIP38, that interacts with the p50 subunit of DNA polymerase  $\delta$  and proliferating cell nuclear antigen. *J. Biol. Chem.* 278: 10041-10047.
- Xie, B., Li, H., Wang, Q., Xie, S., Rahmeh, A., Dai, W. and Lee, M.Y. 2005. Further characterization of human DNA polymerase  $\delta$  interacting protein 38. *J. Biol. Chem.* 280: 22375-22384.
- Klaile, E., Müller, M.M., Kannicht, C., Otto, W., Singer, B.B., Reutter, W., Obrink, B. and Lucka, L. 2007. The cell adhesion receptor carcinoembryonic antigen-related cell adhesion molecule 1 regulates nucleocytoplasmic trafficking of DNA polymerase  $\delta$ -interacting protein 38. *J. Biol. Chem.* 282: 26629-26640.

## CHROMOSOMAL LOCATION

Genetic locus: POLDIP2 (human) mapping to 17q11.2; Poldip2 (mouse) mapping to 11 B5.

## SOURCE

POLDIP2 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of POLDIP2 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-82999 P, (100  $\mu$ 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-82999 X, 200  $\mu$ g/0.1 ml.

## APPLICATIONS

POLDIP2 (S-20) is recommended for detection of POLDIP2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 family member POLDIP3.

POLDIP2 (S-20) is also recommended for detection of POLDIP2 in additional species, including equine, canine, bovine and porcine.

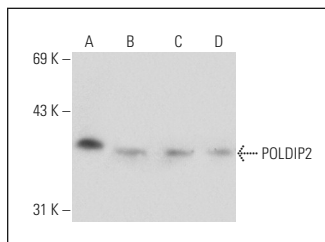
Suitable for use as control antibody for POLDIP2 siRNA (h): sc-76190, POLDIP2 siRNA (m): sc-76191, POLDIP2 shRNA Plasmid (h): sc-76190-SH, POLDIP2 shRNA Plasmid (m): sc-76191-SH, POLDIP2 shRNA (h) Lentiviral Particles: sc-76190-V and POLDIP2 shRNA (m) Lentiviral Particles: sc-76191-V.

POLDIP2 (S-20) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of POLDIP2: 38 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, JAR cell lysate: sc-2276 or MCF7 whole cell lysate: sc-2206.

## DATA



POLDIP2 (S-20): sc-82999. Western blot analysis of POLDIP2 expression in JAR (A), HeLa (B), MCF7 (C) and K-562 (D) whole cell lysates.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.



Try **POLDIP2 (G-10): sc-398591**, our highly recommended monoclonal alternative to POLDIP2 (S-20).