

DP-2 (G-12): sc-6849

BACKGROUND

The human retinoblastoma gene product appears to play an important role in the negative regulation of cell proliferation. Functional inactivation of Rb can be mediated either through mutation or as a consequence of interaction with DNA tumor virus-encoded proteins. Of all the Rb associations described to date, the identification of a complex between Rb and the transcription factor E2F most directly implicates Rb in regulation of cell proliferation. E2F was originally identified through its role in transcriptional activation of the adenovirus E2 promoter. Sequences homologous to the E2F binding site have been found upstream of a number of genes that encode proteins with putative functions in the G₁ and S phases of the cell cycle. E2F-1 forms heterodimers with a second protein, designated DP-1, forming an "active" E2F transcriptional regulatory complex. Additional members of the E2F family include E2F-2, E2F-3, E2F-4, E2F-5 and DP-2.

REFERENCES

- Helin, K., et al. 1992. A cDNA encoding a pRB-binding protein with properties of the transcription factor E2F. *Cell* 70: 337-350.
- Nevins, J.R. 1992. E2F: a link between the Rb tumor suppressor protein and viral oncoproteins. *Science* 258: 424-429.
- Helin, K., et al. 1993. Heterodimerization of the transcription factors E2F-1 and DP-1 leads to cooperative *trans*-activation. *Genes Dev.* 7: 1850-1861.
- Krek, W., et al. 1993. Binding to DNA and the retinoblastoma gene product promoted by complex formation of different E2F family members. *Science* 262: 1557-1560.
- Ginsberg, D., et al. 1994. E2F-4, a new member of the E2F transcription factor family, interacts with p107. *Genes Dev.* 8: 2665-2679.
- Beijersbergen, R.L., et al. 1994. E2F-4, a new member of the E2F gene family, has oncogenic activity and associates with p107 *in vivo*. *Genes Dev.* 8: 2680-2690.
- Zhang, Y. and Chellappan S.P. 1995. Cloning and characterization of human DP2, a novel dimerization partner of E2F. *Oncogene* 10: 2085-2093.
- Ishida, H., et al. 2005. Identification and characterization of novel isoforms of human DP-1: DP-1 α regulates the transcriptional activity of E2F1 as well as cell cycle progression in a dominant-negative manner. *J. Biol. Chem.* 280: 24642-24648.

CHROMOSOMAL LOCATION

Genetic locus: TFDP2 (human) mapping to 3q23; Tfdp2 (mouse) mapping to 9 E3.3.

SOURCE

DP-2 (G-12) is a mouse monoclonal antibody raised against amino acids 1-386 representing full length DP-2 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-6849 X, 200 μ g/0.1 ml.

APPLICATIONS

DP-2 (G-12) is recommended for detection of DP-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).

Suitable for use as control antibody for DP-2 siRNA (h): sc-37815, DP-2 siRNA (m): sc-37816, DP-2 shRNA Plasmid (h): sc-37815-SH, DP-2 shRNA Plasmid (m): sc-37816-SH, DP-2 shRNA (h) Lentiviral Particles: sc-37815-V and DP-2 shRNA (m) Lentiviral Particles: sc-37816-V.

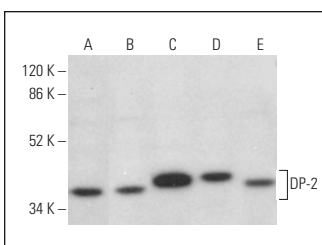
DP-2 (G-12) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of N-terminally truncated DP-2: 43 kDa.

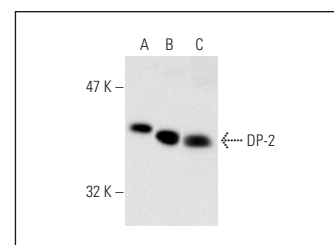
Molecular Weight of DP-2 splice variant: 55 kDa.

Positive Controls: A-431 nuclear extract: sc-2122, HeLa nuclear extract: sc-2120 or Hep G2 nuclear extract: sc-364819.

DATA



DP-2 (G-12): sc-6849. Western blot analysis of DP-2 expression in HEK293 (A), JAR (B), F9 (C) and BYDP (D) whole cell lysates and KNRK nuclear extract (E).



DP-2 (G-12): sc-6849. Western blot analysis of DP-2 expression in HeLa (A), Hep G2 (B) and A-431 (C) nuclear extracts.

SELECT PRODUCT CITATIONS

- Kohn, M.J., et al. 2003. DP-1 is required for extra-embryonic development. *Development* 130: 1295-1305.
- Kohn, M.J., et al. 2004. DP-1 is largely dispensable for embryonic development. *Mol. Cell. Biol.* 24: 7197-7205.
- Milton, A.H., et al. 2006. 14-3-3 proteins integrate E2F activity with the DNA damage response. *EMBO J.* 25: 1046-1057.
- Komori, H., et al. 2018. Differential requirement for dimerization partner DP between E2F-dependent activation of tumor suppressor and growth-related genes. *Sci. Rep.* 8: 8438.

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.