SANTA CRUZ BIOTECHNOLOGY, INC.

E2F-3 (PG37): sc-69684

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 G_1 and S phases of the cell cycle. E2F-1 is a member of a broader family of transcription regulators including E2F-2, E2F-3, E2F-4, E2F-5, E2F-6 and E2F-7 each of which forms heterodimers with a second protein, DP-1, forming an "active" E2F transcriptional regulatory complex.

REFERENCES

1. Chellappan, S., et al. 1991. The E2F transcription factor is a cellular target for the Rb protein. Cell 65: 1053-1061.
2. Chittenden, T., et al. 1991. The T/E1A-binding domain of the retinoblastoma product can interact selectively with a sequence-specific DNA-binding protein. Cell 65: 1073-1082.
3. Helin, K., et al. 1992. A cDNA encoding a pRb-binding protein with properties of the transcription factor E2F. Cell 70: 337-350.
4. Helin, K., et al. 1993. Heterodimerization of the transcription factors E2F-1 and DP-1 leads to cooperative transactivation. Genes Dev. 7: 1850-1861.
5. 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.
6. Ginsberg, D., et al. 1994. E2F-4, a new member of the E2F transcription factor family, interacts with p107. Genes Dev. 8: 2665-2679.
7. 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.
8. Trimarchi, J.M., et al. 1998. E2F-6, a member of the E2F family that can behave as a transcriptional repressor. Proc. Natl. Acad. Sci. USA 95: 2850-2855.

CHROMOSOMAL LOCATION

Genetic locus: E2F3 (human) mapping to 6p22.3; E2f3 (mouse) mapping to 13 A3.2.

SOURCE

E2F-3 (PG37) is a mouse monoclonal antibody raised against recombinant E2F-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

E2F-3 (PG37) is recommended for detection of E2F-3 of mouse, rat 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)].

Suitable for use as control antibody for E2F-3 siRNA (h): sc-37817, E2F-3 siRNA (m): sc-37818, E2F-3 shRNA Plasmid (h): sc-37817-SH, E2F-3 shRNA Plasmid (m): sc-37818-SH, E2F-3 shRNA (h) Lentiviral Particles: sc-37817-V and E2F-3 shRNA (m) Lentiviral Particles: sc-37818-V.

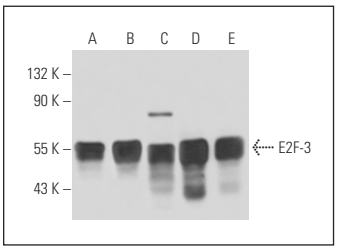
Molecular Weight of E2F-3: 45 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, Y79 cell lysate: sc-2240 or Y79 nuclear extract: sc-2126.

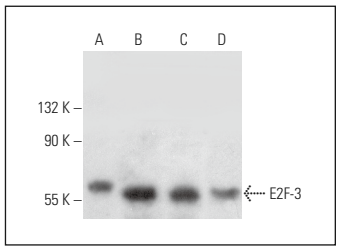
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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



E2F-3 (PG37): sc-69684. Western blot analysis of E2F-3 expression in K-562 (**A**) and Y79 (**B**) whole cell lysates, and K-562 (**C**), Y79 (**D**) and PMA treated Y79 (**E**) nuclear extracts.



E2F-3 (PG37): sc-69684. Western blot analysis of E2F-3 expression in NIH/3T3 (**A**), KNRK (**B**) and 3611-RF (**C**) nuclear extracts and RPE-J whole cell lysate (**D**).

SELECT PRODUCT CITATIONS

1. Vinall, R.L., et al. 2012. MiR-34a chemosensitizes bladder cancer cells to cisplatin treatment regardless of p53-Rb pathway status. Int. J. Cancer 130: 2526-2538.
2. Burdova, K., et al. 2019. E2F1 proteolysis via SCF-cyclin F underlies synthetic lethality between cyclin F loss and Chk1 inhibition. EMBO J. 38: e101443.

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.