SANTA CRUZ BIOTECHNOLOGY, INC.

E2F-1 (KH95): sc-251

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.

CHROMOSOMAL LOCATION

Genetic locus: E2F1 (human) mapping to 20q11.22; E2f1 (mouse) mapping to 2 H1.

SOURCE

E2F-1 (KH95) is a mouse monoclonal antibody raised against amino acids 342-386 of E2F-1 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-251 X, 200 µg/0.1 ml.

E2F-1 (KH95) is available conjugated to agarose (sc-251 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-251 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-251 PE), fluorescein (sc-251 FITC), Alexa Fluor® 488 (sc-251 AF488), Alexa Fluor® 546 (sc-251 AF546), Alexa Fluor® 594 (sc-251 AF594) or Alexa Fluor® 647 (sc-251 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-251 AF680) or Alexa Fluor® 790 (sc-251 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, E2F-1 (KH95) is available conjugated to biotin (sc-251 B), 200 µg/ml, for WB, IHC(P) and ELISA.

STORAGE

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

APPLICATIONS

E2F-1 (KH95) is recommended for detection of E2F-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] , immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

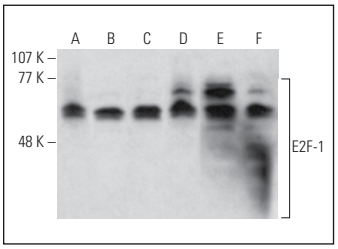
Suitable for use as control antibody for E2F-1 siRNA (h): sc-29297, E2F-1 siRNA (m): sc-35247, E2F-1 siRNA (r): sc-61861, E2F-1 shRNA Plasmid (h): sc-29297-SH, E2F-1 shRNA Plasmid (m): sc-35247-SH, E2F-1 shRNA Plasmid (r): sc-61861-SH, E2F-1 shRNA (h) Lentiviral Particles: sc-29297-V, E2F-1 shRNA (m) Lentiviral Particles: sc-35247-V and E2F-1 shRNA (r) Lentiviral Particles: sc-61861-V.

E2F-1 (KH95) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

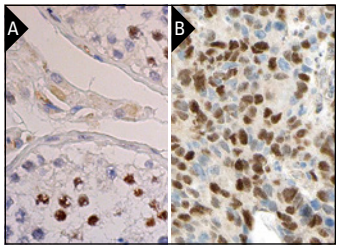
Molecular Weight of E2F-1: 60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HeLa nuclear extract: sc-2120 or HEL 92.1.7 cell lysate: sc-2270.

DATA



E2F-1 (KH95) HRP: sc-251 HRP. Direct western blot analysis of E2F-1 expression in A-431 (**A**), HeLa (**B**), HEL 92.1.7 (**C**), MOLT-4 (**D**) and Ramos (**E**) whole cell lysates and HeLa nuclear extract (**F**).



E2F-1 (KH95): sc-251. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing nuclear staining of subset of cells in seminiferous ducts (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human colorectal cancer tissue showing nuclear staining of tumor cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Cress, W.D. and Nevins, J.R. 1994. Interacting domains of E2F-1, DP1, and the adenovirus E4 protein. J. Virol. 68: 4213-4219.
2. Liu, K., et al. 2021. Overexpression of TopBP1, a canonical ATR/Chk1 activator, paradoxically hinders ATR/Chk1 activation in cancer. J. Biol. Chem. 296: 100382.
3. Gemble, S., et al. 2022. Genetic instability from a single S phase after whole-genome duplication. Nature 604: 146-151.
4. Glumac, M., et al. 2023. Mechanism of *cis*-nerolidol-induced bladder carcinoma cell death. Cancers 15: 981.

RESEARCH USE

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