SANTA CRUZ BIOTECHNOLOGY, INC.

TFIIIC110 (N-20): sc-15936

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The Power to Question

BACKGROUND

RNA polymerase (pol) III synthesizes tRNA, 5s rRNA, 7SL RNA and U6 snRNA and is overexpressed in many transformed cell lines and tumors *in vivo,* since cells must duplicate its protein components before division. Therefore, in order to maintain rapid growth, cells must produce a high level of Pol III transcribed RNA, which requires the presence of the TFIIIB and TFIIIC2 transcription factor complexes. The TFIIIC2 complex is composed of five subunits, TFIIIC220, TFIIIC110, TFIIIC102, TFIIIC90 and TFIIIC63, that are overexpressed in adenovirus transformed cells as well as in malignant cells *in vivo,* such as ovarian carcinomas. TFIIIC2 recruits RNA pol III and TFIIIB to promoter elements and may be a key component in the deregulation of malignant cells. The TFIIIB complex includes the TATA-binding protein (TBP), TFIIB-related factor 1 (BRF1) and TFIIIB'', the expression of which are also upregulated in transformed cells. In many carcinomas, the tumor suppressors retinoblastoma (RB) and p53 are inactivated, which affects their ability to bind and inactivate the function of TFIIIB.

REFERENCES

1. Scott, M.R., et al. 1983. Activation of mouse genes in transformed cells. Cell 34: 557-567.
2. Chen, W., et al. 1997. Expression of neural BC1 RNA: induction in murine tumours. Eur. J. Cancer 33: 288-292.
3. Hsieh, Y.J., et al. 1999. The TFIIIC90 subunit of TFIIIC interacts with multiple components of the RNA polymerase III machinery and contains a histone-specific acetyltransferase activity. Mol. Cell. Biol. 19: 7697-7704.
4. Winter, A.G., et al. 2000. RNA polymerase III transcription factor TFIIIC2 is overexpressed in ovarian tumors. Proc. Natl. Acad. Sci. USA 97: 12619-12624.
5. Moir, R.D., et al. 2000. Interactions between the tetratricopeptide repeat-containing transcription factor TFIIIC131 and its ligand, TFIIIB70. Evidence for a conformational change in the complex. J. Biol. Chem. 275: 26591-26598.
6. McCulloch, V., et al. 2000. Alternatively spliced hBRF variants function at different RNA polymerase III promoters. EMBO J. 19: 4134-4143.
7. Schramm, L., et al. 2000. Different human TFIIIB activities direct RNA polymerase III transcription from TATA-containing and TATA-less promoters. Genes Dev. 14: 2650-2663.
8. Brown, T.R., et al. 2000. RNA polymerase III transcription: its control by tumor suppressors and its deregulation by transforming agents. Gene Expr. 9: 15-28.
9. Sutcliffe, J.E., et al. 2000. Retinoblastoma protein disrupts interactions required for RNA polymerase III transcription. Mol. Cell. Biol. 20: 9192-9202.

CHROMOSOMAL LOCATION

Genetic locus: GTF3C2 (human) mapping to 2p23.3; Gtf3c2 (mouse) mapping to 5 B1.

RESEARCH USE

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

SOURCE

TFIIIC110 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of TFIIIC110 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-15936 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

TFIIIC110 (N-20) is recommended for detection of TFIIIC110 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

TFIIIC110 (N-20) is also recommended for detection of TFIIIC110 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for TFIIIC110 siRNA (h): sc-38542, TFIIIC110 siRNA (m): sc-38543, TFIIIC110 shRNA Plasmid (h): sc-38542-SH, TFIIIC110 shRNA Plasmid (m): sc-38543-SH, TFIIIC110 shRNA (h) Lentiviral Particles: sc-38542-V and TFIIIC110 shRNA (m) Lentiviral Particles: sc-38543-V.

Molecular Weight of TFIIIC110: 101 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) 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.

SELECT PRODUCT CITATIONS

1. Mavinakere, M.S., et al. 2004. Dual targeting of the human cytomegalovirus UL37 exon 1 protein during permissive infection. J. Gen. Virol. 85: 323-329.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.