

TFIIIC110 (2395C2a): sc-81406

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), TFIIIB-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.

CHROMOSOMAL LOCATION

Genetic locus: GTF3C2 (human) mapping to 2p23.3.

SOURCE

TFIIIC110 (2395C2a) is a mouse monoclonal antibody raised against a recombinant protein corresponding to a region near the N-terminus of TFIIIC110 of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 1.0% stabilizer protein.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

APPLICATIONS

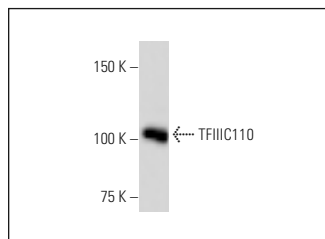
TFIIIC110 (2395C2a) is recommended for detection of TFIIIC110 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

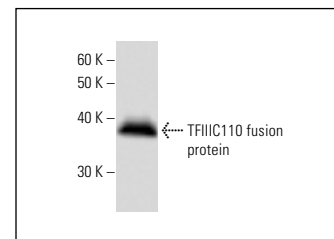
Molecular Weight of TFIIIC110: 101 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

DATA



TFIIIC110 (2395C2a): sc-81406. Western Blot analysis of TFIIIC110 expression in HeLa whole cell lysate.



TFIIIC110 (2395C2a): sc-81406. Western Blot analysis of human recombinant TFIIIC110 fusion protein.

SELECT PRODUCT CITATIONS

1. Liu, C., et al. 2015. PRC2 regulates RNA polymerase III transcribed non-translated RNA gene transcription through EZH2 and SUZ12 interaction with TFIIIC complex. *Nucleic Acids Res.* 43: 6270-6284.
2. Peng, F., et al. 2020. The transcription factor Sp1 modulates RNA polymerase III gene transcription by controlling BRF1 and GTF3C2 expression in human cells. *J. Biol. Chem.* 295: 4617-4630.
3. Jin, L., et al. 2020. STRAP regulates alternative splicing fidelity during lineage commitment of mouse embryonic stem cells. *Nat. Commun.* 11: 5941.
4. Zhang, C., et al. 2022. Transcription factor GATA4 drives RNA polymerase III-directed transcription and transformed cell proliferation through a filamin A/GATA4/SP1 pathway. *J. Biol. Chem.* 298: 101581.
5. Wu, Z., et al. 2022. Early growth response 1 strengthens Pol-III-directed transcription and transformed cell proliferation by controlling PTEN/AKT signalling activity. *Int. J. Mol. Sci.* 23: 4930.
6. Zhang, C., et al. 2023. STAT3 promotes RNA polymerase III-directed transcription by controlling the miR-106a-5p/TP73 axis. *Elife* 12: e82826.
7. Vidal, R., et al. 2024. Association with TFIIIC limits MYCN localisation in hubs of active promoters and chromatin accumulation of non-phosphorylated RNA polymerase II. *Elife* 13: RP94407.

RESEARCH USE

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