SANTA CRUZ BIOTECHNOLOGY, INC.

TCEA1 (7): sc-136096

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Initiation of transcription from protein-coding genes in eukaryotes is a complex process that requires RNA polymerase II (Pol II) and several basal transcription factors to form the preinitiation complex (PIC). After initiation, promotor-specific contacts between the PIC and Pol II are disrupted, thus allowing elongation (a process regulated by Pol II and several proteins called elongation factors) to begin. TCEA1 (transcription elongation factor A protein 1), also known as TFIIS or SII, is an elongation factor that is essential for proper elongation past DNA arresting sites. When template-encoded arresting sites trap elongating RNA polymerases, the transcription complex becomes locked, preventing efficient elongation. TCEA1 binds to Pol II and functions to cleave the nascent transcript, thereby unlocking the complex and allowing transcription to continue. Localized to the nucleus, TCEA1 contains three independently-folding domains, all of which are necessary for proper binding to Pol II. Defects in the gene encoding TCEA1 are implicated in salivary gland pleiomorphic adenomas, which are the most common form of benign epithelial tumors of the salivary gland.

REFERENCES

1. Ito, T., et al. 2000. Gene structure and chromosome mapping of mouse transcription elongation factor SII (Tcea1). Gene 244: 55-63.
2. Kulish, D., et al. 2001. TFIIS enhances transcriptional elongation through an artificial arrest site *in vivo*. Mol. Cell. Biol. 21: 4162-4168.
3. Kugawa, F., et al. 2002. Genomic cloning of *Xenopus* TFIIS (TCEA1) and identification of its transcription start site. DNA Seq. 13: 55-60.
4. Shakib, K., et al. 2005. Proteomics profiling of nuclear proteins for kidney fibroblasts suggests hypoxia, meiosis, and cancer may meet in the nucleus. Proteomics 5: 2819-2838.
5. Fish, R.N., et al. 2006. Genetic interactions between TFIIF and TFIIS. Genetics 173: 1871-1884.
6. Asp, J., et al. 2006. CHCHD7-PLAG1 and TCEA1-PLAG1 gene fusions resulting from cryptic, intrachromosomal 8q rearrangements in pleomorphic salivary gland adenomas. Genes Chromosomes Cancer 45: 820-828.
7. Ito, T., et al. 2006. Transcription elongation factor SII is required for definitive hematopoiesis. Mol. Cell. Biol. 26: 3194-3203.

CHROMOSOMAL LOCATION

Genetic locus: TCEA1 (human) mapping to 8q11.23; Tcea1 (mouse) mapping to 1 A1.

SOURCE

TCEA1 (7) is a mouse monoclonal antibody raised against amino acids 93-284 of TCEA1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

TCEA1 (7) is recommended for detection of TCEA1 of mouse, rat, human and canine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

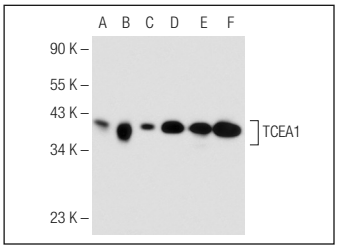
Suitable for use as control antibody for TCEA1 siRNA (h): sc-63109, TCEA1 siRNA (m): sc-63110, TCEA1 shRNA Plasmid (h): sc-63109-SH, TCEA1 shRNA Plasmid (m): sc-63110-SH, TCEA1 shRNA (h) Lentiviral Particles: sc-63109-V and TCEA1 shRNA (m) Lentiviral Particles: sc-63110-V.

Molecular Weight of TCEA1 preprotein: 34 kDa.

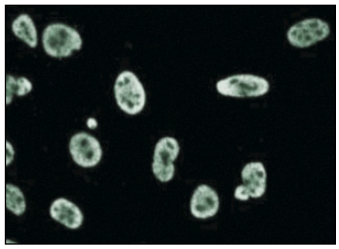
Molecular Weight of TCEA1 mature form: 38 kDa.

Positive Controls: TCEA1 (h): 293T Lysate: sc-111570, HeLa nuclear extract: sc-2120 or K-562 nuclear extract: sc-2130.

DATA



TCEA1 (7): sc-136096. Western blot analysis of TCEA1 expression in non-transfected 293T: sc-117752 (**A**), human TCEA1 transfected 293T: sc-111570 (**B**), HUV-EC-C (**C**) and SP 2/0 (**D**) whole cell lysates and HeLa (**E**) and K-562 (**F**) nuclear extracts.



TCEA1 (7): sc-136096. Immunofluorescence staining of human endothelial cells showing nuclear staining.

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 for detailed protocols and support products.