

TCEA1 (G-5): sc-393439

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 TFIIIS 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

- Ito, T., et al. 2000. Gene structure and chromosome mapping of mouse transcription elongation factor S-II (TCEA1). *Gene* 244: 55-63.
- Kulish, D. and Struhl, K. 2001. TFIIIS enhances transcriptional elongation through an artificial arrest site *in vivo*. *Mol. Cell. Biol.* 21: 4162-4168.
- Kugawa, F. and Aoki, M. 2002. Genomic cloning of *Xenopus* TFIIIS (TCEA1) and identification of its transcription start site. *DNA Seq.* 13: 55-60.
- 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.
- Ito, T., et al. 2006. Transcription elongation factor S-II is required for definitive hematopoiesis. *Mol. Cell. Biol.* 26: 3194-3203.
- Fish, R.N., et al. 2006. Genetic interactions between TFIIIF and TFIIIS. *Genetics* 173: 1871-1884.
- 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.
- Guglielmi, B., et al. 2007. TFIIIS elongation factor and Mediator act in conjunction during transcription initiation *in vivo*. *Proc. Natl. Acad. Sci. USA* 104: 16062-16067.

CHROMOSOMAL LOCATION

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

SOURCE

TCEA1 (G-5) is a mouse monoclonal antibody raised against amino acids 78-144 mapping near the N-terminus of TCEA1 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

TCEA1 (G-5) is recommended for detection of TCEA1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

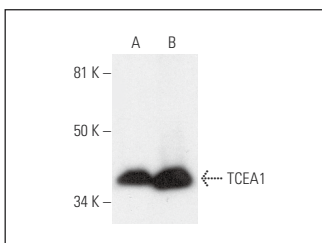
Molecular Weight of mature TCEA1 form: 38 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HUV-EC-C whole cell lysate: sc-364180 or K-562 nuclear extract: sc-2130.

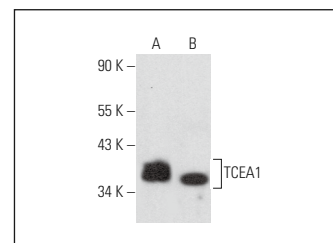
RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



TCEA1 (G-5): sc-393439. Western blot analysis of TCEA1 expression in HeLa (A) and K-562 (B) nuclear extracts.



TCEA1 (G-5): sc-393439. Western blot analysis of TCEA1 expression in HUV-EC-C (A) and SP2/0 (B) whole cell lysates.

STORAGE

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