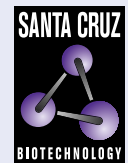


cyclin T1 (F-8): sc-515067



The Power to Question

BACKGROUND

Cyclin T1 was identified as a partner for Cdk9, an RNA polymerase II (RNAPII) transcription elongation factor. Cyclin T1 interacts with the transactivation domain of the HIV-1 Tat protein. The interaction of Tat with cyclin T1 enhances the affinity of Tat for the viral TAR RNA stem-loop structure, suggesting that Tat can recruit cyclin T1/Cdk9 to RNAPII through cooperative binding to TAR. The human positive transcription elongation factor b (P-TEFb) consists of a cyclin dependent kinase, Cdk9, paired with a cyclin T. Cdk9 may be paired with either cyclin T1 or cyclin T2, in a mutually exclusive manner. Two forms of cyclin T2, T2a and T2b, are due to alternative splicing. The binding of Tat to TAR was shown to be facilitated by human cyclin T1, but not by cyclins T2a or T2b. Cyclin T2 binds to Cdk9 but not to Tat, and cyclin T2 can inhibit cyclin T1-mediated Tat activity.

REFERENCES

- Herrmann, C.H., et al. 1995. Lentivirus Tat proteins specifically associate with a cellular protein kinase, TAK, that hyperphosphorylates the carboxyl-terminal domain of the large subunit of RNA polymerase II: candidate for a Tat cofactor. *J. Virol.* 69: 1612-1620.
- Yang, X., et al. 1997. TAK, an HIV Tat-associated kinase, is a member of the cyclin-dependent family of protein kinases and is induced by activation of peripheral blood lymphocytes and differentiation of promonocytic cell lines. *Proc. Natl. Acad. Sci. USA* 94: 12331-12336.
- Wei, P., et al. 1998. A novel Cdk9-associated C-type cyclin interacts directly with HIV-1 Tat and mediates its high-affinity, loop-specific binding to TAR RNA. *Cell* 92: 451-462.
- Peng, J., et al. 1998. Identification of multiple cyclin subunits of human P-TEFb. *Genes Dev.* 12: 755-762.
- Wimmer, J., et al. 1999. Interactions between Tat and TAR and human immunodeficiency virus replication are facilitated by human cyclin T1 but not cyclins T2a or T2b. *Virology* 255: 182-189.

CHROMOSOMAL LOCATION

Genetic locus: CCNT1 (human) mapping to 12q13.11.

SOURCE

cyclin T1 (F-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 691-716 at the C-terminus of cyclin T1 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.

Blocking peptide available for competition studies, sc-515067 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

cyclin T1 (F-8) is recommended for detection of cyclin T1 of 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 cyclin T1 siRNA (h): sc-35143, cyclin T1 shRNA Plasmid (h): sc-35143-SH and cyclin T1 shRNA (h) Lentiviral Particles: sc-35143-V.

Molecular Weight of cyclin T1: 87 kDa.

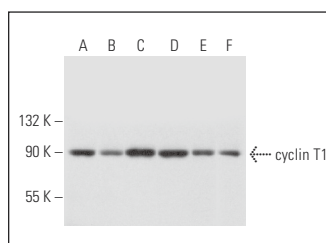
Positive Controls: Jurkat nuclear extract: sc-2132, HeLa nuclear extract: sc-2120 or A-431 nuclear extract: sc-2122.

RECOMMENDED SUPPORT REAGENTS

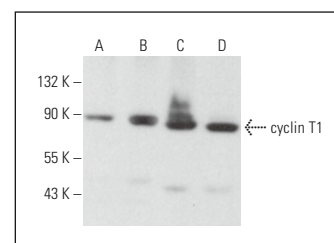
To ensure optimal results, the following support reagents are recommended:

- 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.
- Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).
- 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



cyclin T1 (F-8): sc-515067. Western blot analysis of cyclin T1 expression in HeLa (A), Y79 (B), K-562 (C), Jurkat (D) and A-431 (E) nuclear extracts and MCF7 whole cell lysate (F).



cyclin T1 (F-8): sc-515067. Western blot analysis of cyclin T1 expression in K-562 (A) and HEL 92.1.7 (B) nuclear extracts and Daudi (C) and Raji (D) whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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



See **cyclin T1 (E-3): sc-271348** for cyclin T1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.