



cyclin T2a/b (m): 293T Lysate: sc-119550

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

1. 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.
2. 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.
3. 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.
4. Peng, J., et al. 1998. Identification of multiple cyclin subunits of human P-TEFb. *Genes Dev.* 12: 755-762.
5. 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.
6. Napolitano, G., et al. 1999. The Cdk9-associated cyclins T1 and T2 exert opposite effects on HIV-1 Tat activity. *AIDS* 13: 1453-1459.
7. Napolitano, G. et al. 1999. The Cdk9-associated cyclins T1 and T2 exert opposite effects on HIV-1 Tat activity. *AIDS* 13: 1453-1459.
8. Liou, L.Y., et al. 2006. Cyclin T1 but not cyclin T2a is induced by a post-transcriptional mechanism in PAMP-activated monocyte-derived macrophages. *J. Leukoc. Biol.* 79: 388-396.
9. Cottone, G., et al. 2006. Pkn is a novel partner of cyclin T2a in muscle differentiation. *J. Cell. Physiol.* 207: 232-237.

CHROMOSOMAL LOCATION

Genetic locus: Ccnt2 (mouse) mapping to 1 E3.

PRODUCT

cyclin T2a/b (m): 293T Lysate represents a lysate of mouse cyclin T2a/b transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

cyclin T2a/b (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive cyclin T2a/b antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

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.