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CCNT1 Antibody

Catalog # ASC11611

Product Information

Application	WB, IF, E, IHC-P
Primary Accession	O60563
Other Accession	NP_001231, 17978466
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	80685
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	CCNT1 antibody can be used for detection of CCNT1 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	904
Other Names	Cyclin-T1, CycT1, Cyclin-T, CCNT1
Target/Specificity	CCNT1;
Reconstitution & Storage	CCNT1 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.
Precautions	CCNT1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CCNT1
Function	Regulatory subunit of the cyclin-dependent kinase pair (CDK9/cyclin-T1) complex, also called positive transcription elongation factor B (P-TEFb), which facilitates the transition from abortive to productive elongation by phosphorylating the CTD (C-terminal domain) of the large subunit of RNA polymerase II (RNA Pol II) (PubMed:16109376, PubMed:16109377, PubMed:30134174, PubMed:35393539). Required to activate the protein kinase activity of CDK9: acts by mediating formation of liquid-liquid phase separation (LLPS) that enhances binding of P-TEFb to the CTD of RNA Pol II (PubMed:29849146, PubMed:35393539).
Cellular Location	Nucleus
Tissue Location	Ubiquitously expressed.

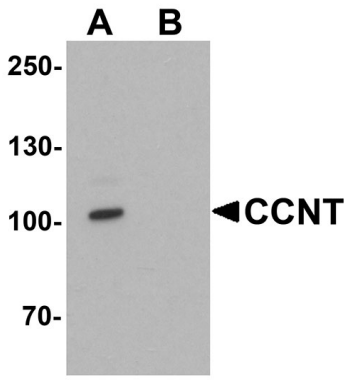
Background

CCNT1 Antibody: Cyclins function as regulators of CDK kinases and exhibit distinct expression and degradation patterns which contribute to the temporal coordination of each mitotic event. The cyclin-T1 protein (CCNT1) belongs to the highly conserved cyclin family, whose members are characterized by a dramatic periodicity in protein abundance through the cell cycle. CCNT1 tightly associates with CDK9 kinase, and was found to be a major subunit of the transcription elongation factor p-TEFb. The kinase complex containing CCNT1 and the elongation factor can interact with, and act as a cofactor of human immunodeficiency virus type 1 (HIV-1) Tat protein, and was shown to be both necessary and sufficient for full activation of viral transcription. CCNT1 and its kinase partner were also found to be involved in the phosphorylation and regulation of the carboxy-terminal domain (CTD) of the largest RNA polymerase II subunit.

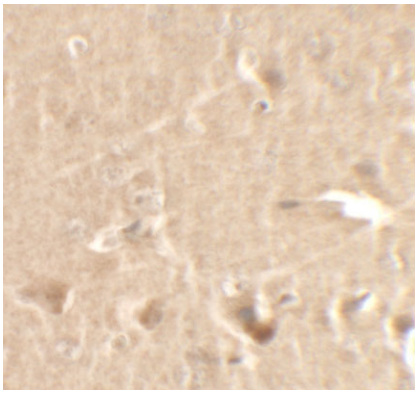
References

Uhlmann F, Bouchoux C, and Lopez-Aviles S. A quantitative model for cyclin-dependent kinase control of the cell cycle: revisited. Philos. Trans. R. Soc. Lond. B. biol. Sci. 2011; 366:3572-83.
Wei P, Garber ME, Fang SM, et al. 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 1998; 92:451-62.
Mancebo HS, Lee G, Flygare J, et al. P-TEFb kinase is require for HIV Tat transcriptional activation in vivo and in vitro. Genes Dev. 1997 ; 11 :2633-44.
Majello B and Napolitano G. Control of RNA polymerase II activity by dedicated CTD kinases and phosphatases. Front. Biosci. 2001; 6:D1358-68.

Images

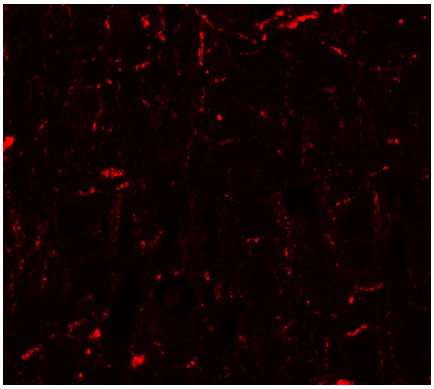


Western blot analysis of CCNT1 in rat brain tissue lysate with CCNT1 antibody at 1 µg/mL in (A) the absence and (B) the presence of blocking peptide.



Immunohistochemistry of CCNT1 in rat brain tissue with CCNT1 antibody at 2.5 µg/ml.

Immunofluorescence of CCNT1 in rat brain tissue with CCNT1 antibody at 20 µg/ml.



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