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Anti-Cyclin T1 Antibody Picoband™ (monoclonal, 3B7)

Catalog # ABO15080

Product Information

Application	WB, FC
Primary Accession	O60563
Host	Mouse
Isotype	Mouse IgG2b
Reactivity	Human, Monkey
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-Cyclin T1 Antibody Picoband™ (monoclonal, 3B7) . Tested in Flow Cytometry, WB applications. This antibody reacts with Human, Monkey.
Reconstitution	Adding 0.2 ml of distilled water will yield a concentration of 500 □g/ml.

Additional Information

Gene ID	904
Other Names	Cyclin-T1, CycT1, Cyclin-T, CCNT1
Calculated MW	80685
Application Details	Western blot, 0.25-0.5 □g/ml, Human, Monkey Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
Clone Names	Clone: 3B7
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human Cyclin T1, different from the related mouse sequence by one amino acid.
Purification	Immunogen affinity purified.
Storage	At -20°C for one year from date of receipt. After reconstitution, at 4°C for one month. It can also be aliquotted and stored frozen at -20°C for six months. Avoid repeated freezing and thawing.

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

Cyclin-T1 is a protein that in humans is encoded by the CCNT1 gene. This gene encodes a member of the highly conserved cyclin C subfamily. The encoded protein tightly associates with cyclin-dependent kinase 9, and is a major subunit of positive transcription elongation factor b (p-TEFb). In humans, there are multiple forms of positive transcription elongation factor b, which may include one of several different cyclins along with cyclin-dependent kinase 9. The complex containing the encoded cyclin and cyclin-dependent kinase 9 acts as a cofactor of human immunodeficiency virus type 1 (HIV-1) Tat protein, and is both necessary and sufficient for full activation of viral transcription. This cyclin and its kinase partner are also involved in triggering transcript elongation through phosphorylation of the carboxy-terminal domain of the largest RNA polymerase II subunit. Overexpression of this gene is implicated in tumor growth. Alternative splicing results in multiple transcript variants.

Images

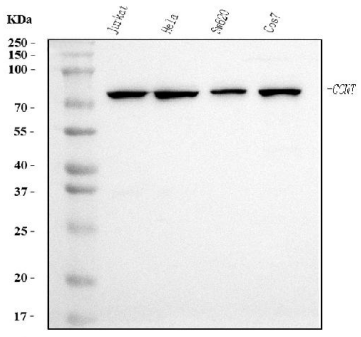
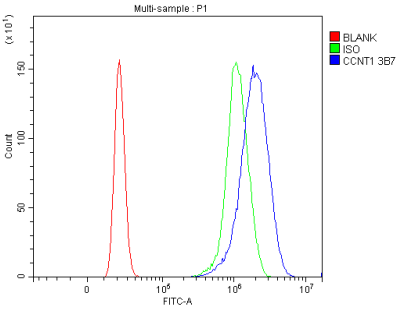


Figure 1. Western blot analysis of Cyclin T1 using anti-Cyclin T1 antibody (M02703).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions.
Lane 1: human Jurkat whole cell lysates,
Lane 2: human Hela whole cell lysates,
Lane 3: human SW620 tissue lysates,
Lane 4: monkey COS-7 whole cell lysates.
After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Cyclin T1 antigen affinity purified monoclonal antibody (Catalog # M02703) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Cyclin T1 at approximately 81 kDa. The expected band size for Cyclin T1 is at 81 kDa.

Figure 2. Flow Cytometry analysis of U20S cells using anti-Cyclin T1 antibody (M02703).
Overlay histogram showing U20S cells stained with



M02703 (Blue line). The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Cyclin T1 Antibody (M02703, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.

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