

Anti-Cyclin D1 Antibody

0407-27



Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human, Mouse, Rat, Zebrafish
Applications:	WB, IF-Cell, FC
Molecular Wt:	Predicted band size: 34 kDa

Description: Cyclin D1 is a protein that in humans is encoded by the CCND1 gene. The CCND1 gene encodes the cyclin D1 protein. The human CCND1 gene is located on the long arm of chromosome 11 (band 11q13). It is 13,388 base pairs long, and translates into 295 amino acids. Cyclin D1 is expressed in all adult human tissues with the exception of cells derived from bone marrow stem cell lines (both lymphoid and myeloid). The protein encoded by this gene belongs to the highly conserved cyclin family, whose members are characterized by a dramatic periodicity in protein abundance throughout the cell cycle. Cyclins function as regulators of CDKs (Cyclin-dependent kinase). Different cyclins exhibit distinct expression and degradation patterns which contribute to the temporal coordination of each mitotic event. This cyclin forms a complex with and functions as a regulatory subunit of CDK4 or CDK6, whose activity is required for cell cycle G1/S transition. This protein has been shown to interact with tumor suppressor protein Rb and the expression of this gene is regulated positively by Rb. Mutations, amplification and overexpression of this gene, which alters cell cycle progression, are observed frequently in a variety of tumors and may contribute to tumorigenesis. Micrograph of cyclin D1 staining in a mantle cell lymphoma. Immunohistochemical staining of cyclin D1 antibodies is used to diagnose mantle cell lymphoma. Cyclin D1 has been found to be overexpressed in breast carcinoma. Its potential use as a biomarker was suggested.

Immunogen: This antibody is produced by immunizing rabbits with a synthetic peptide (KLH-coupled) corresponding to a region of C-terminal residues of cyclin D1.

Positive control: MCF-7 lysates, A549, HepG2, N2A, A431.

Subcellular location: Nucleus, Cytoplasm, Nucleus membrane.

Database links: SwissProt: P24385 Human | P25322 Mouse | P39948 Rat

Recommended Dilutions:

WB	1:5,000
IF-Cell	1:200
FC	1:500-1:1,000

Storage Buffer: 1*PBS (pH7.4), 0.2% BSA, 25% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Store at +4°C after thawing. Aliquot store at -20°C. Avoid repeated freeze / thaw cycles.

Purity: Immunogen affinity purified.

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Images

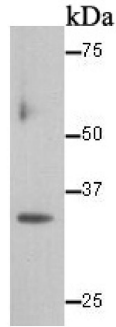


Fig1: Western blot analysis of Cyclin D1 on MCF-7 lysate. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody was used at a 1:5,000 dilution in 5% BSA at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:5,000 dilution was used for 1 hour at room temperature.

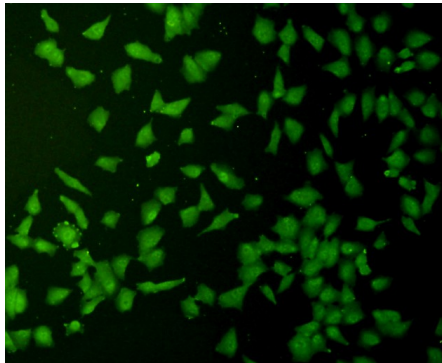


Fig2: ICC staining Cyclin D1 in A549 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the antibody (0407-27) at a dilution of 1:200 for 1 hour at room temperature, washed with PBS. Alexa Fluor™ 488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/100 dilution.

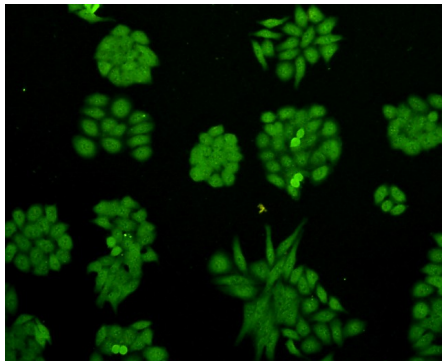


Fig3: ICC staining Cyclin D1 in HepG2 cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the antibody (0407-27) at a dilution of 1:200 for 1 hour at room temperature, washed with PBS. Alexa Fluor™ 488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/100 dilution.

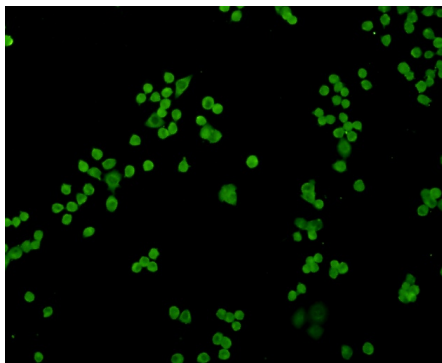


Fig4: ICC staining Cyclin D1 in N2A cells (green). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with the antibody (0407-27) at a dilution of 1:100 for 1 hour at room temperature, washed with PBS. Alexa Fluor™ 488 Goat anti-Rabbit IgG was used as the secondary antibody at 1/100 dilution.

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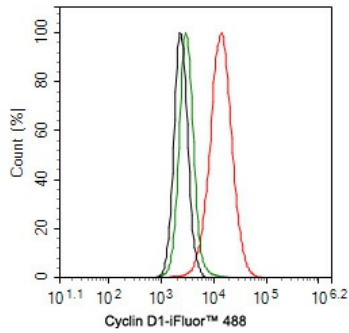


Fig5: Flow cytometric analysis of A431 cells labeling Cyclin D1.

Cells were fixed and permeabilized. Then stained with the primary antibody (0407-27, 1ug/ml) (red) compared with Rabbit IgG Isotype Control (green). After incubation of the primary antibody at +4°C for an hour, the cells were stained with a iFluor™ 488 conjugate-Goat anti-Rabbit IgG Secondary antibody (HA1121) at 1/1,000 dilution for 30 minutes at +4°C. Unlabelled sample was used as a control (cells without incubation with primary antibody; black).

Note: All products are “FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE”.

Background References

1. LaBaer J et al. New functional activities for the p21 family of CDK inhibitors. *Genes Dev* 11:847-862 (1997).
2. Matsuura I et al. Cyclin-dependent kinases regulate the antiproliferative function of Smads. *Nature* 430:226-231 (2004).

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