Anti-Cyclin B1 Antibody [C2-F2]

M1508-1

Product Type:	Mouse monoclonal IgG1, primary antibodies
Species reactivity:	Human
Applications:	WB, IF-Cell
Molecular Wt:	Predicted band size: 48 kDa
Clone number:	C2-F2

Description: Cyclin B1 is a regulatory protein involved in mitosis. The gene product complexes with p34 (Cdk1) to form the maturation-promoting factor (MPF). Two alternative transcripts have been found, a constitutively expressed transcript and a cell cycle-regulated transcript that is expressed predominantly during G2/M phase of the cell cycle. The different transcripts result from the use of alternate transcription initiation sites. Cyclin B1 contributes to the switch-like all or none behavior of the cell in deciding to commit to mitosis. Its activation is well-regulated, and positive feedback loops ensure that once the cyclin B1-Cdk1 complex is activated, it is not deactivated. Cyclin B1-Cdk1 is involved in the early events of mitosis, such as chromosome condensation, nuclear envelope breakdown, and spindle pole assembly. Once activated, cyclin B1-Cdk1 promotes several of the events of early mitosis. The active complex phosphorylates and activates 13S condensin, which helps to condense chromosomes. Another important function of the cyclin B1-Cdk1 complex is to break down the nuclear envelope. The nuclear envelope is a membranous structure containing large protein complexes supported by a network of nuclear lamins. Phosphorylation of the lamins by cyclin B1-Cdk1 causes them to dissociate, compromising the structural integrity of the nuclear envelope so that it breaks down. The destruction of the nuclear envelope is important because it allows the mitotic spindle to access the chromosomes.

Immunogen:	Synthetic peptide (KLH-coupled) within human Cyclin B1 aa 391-433.
Positive control:	K562 cell lysates, HepG2, LOVO.
Subcellular location:	Cytoplasm, Nucleus, cytoskeleton, microtubule organizing center, centrosome.
Database links:	SwissProt: P14635 Human
Recommended Dilutions:	
WB	1:500
IF-Cell	1:200-1:500
Storage Buffer:	1*PBS (pH7.4), 0.2% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Store at +4℃ after thawing. Aliquot store at -20℃. Avoid repeated freeze / thaw cycles.
Purity:	Protein A affinity purified.

Images

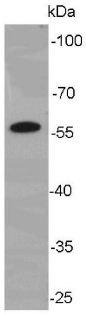

Fig1: Western blot analysis of Cyclin B1 on K562 cell lysate. Proteins were transferred to a PVDF membrane and blocked with 5% BSA in PBS for 1 hour at room temperature. The primary antibody was used at a 1:500 dilution in 5% BSA at room temperature for 2 hours. Goat Anti-Mouse IgG - HRP Secondary Antibody (HA1006) at 1:5,000 dilution was used for 1 hour at room temperature.

Predicted band size: 48 kDa
Observed band size: 58 kDa

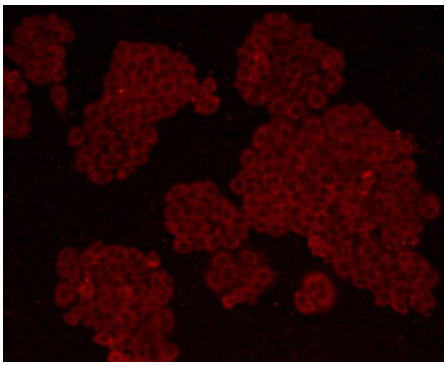

Fig2: ICC staining Cyclin B1 in HepG2 cells (red). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with Cyclin B1 monoclonal antibody at a dilution of 1:200 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™555 Goat anti-Mouse IgG was used as the secondary antibody at 1/100 dilution.

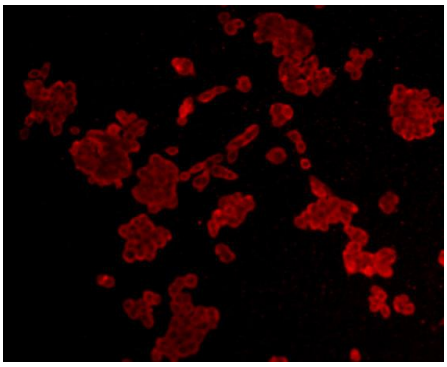

Fig3: ICC staining Cyclin B1 in LOVO cells (red). Formalin fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 10 minutes at room temperature and blocked with 1% Blocker BSA for 15 minutes at room temperature. Cells were probed with Cyclin B1 monoclonal antibody at a dilution of 1:200 for 1 hour at room temperature, washed with PBS. Alexa Fluorc™555 Goat anti-Mouse IgG was used as the secondary antibody at 1/100 dilution.

Background References

1. Cheng J et al. Knockout of cyclin B1 in granulosa cells causes female subfertility. Cell Cycle. 2022 Sep
2. Chen NP et al. CDK1-cyclin-B1-induced kindlin degradation drives focal adhesion disassembly at mitotic entry. Nat Cell Biol. 2022 May