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DATA SHEET

Mouse Anti-Cyclin B1 [CCNB1/1098]: MC0730, MC0730RTU7

Intended Use: For Research Use Only

Description: Cyclins are a family of proteins that activate specific cyclin-dependent kinases required for progression through the cell cycle. The entry of all eukaryotic cells into mitosis is regulated by activation of cdc2/cdk1 at the G2/M transition. This activation is a multi-step process that begins with the binding of the regulatory subunit, cyclin B1, to cdc2/cdk1 to form the mitosis-promoting factor (MPF). MPF remains in the inactive state until phosphorylation of cdc2/cdk1 at Thr161 by cdk activating kinase (CAK) (1,2) and dephosphorylation of cdc2/cdk1 at Thr14/Tyr15 by cdc25C. Five cyclin B1 phosphorylation sites (Ser116, 126, 128, 133, and 147) are located in the cytoplasmic retention signal (CRS) domain and are thought to regulate the translocation of cyclin B1 to the nucleus at the G2/M checkpoint, promoting nuclear accumulation and initiation of mitosis. While MPF itself can phosphorylate Ser126 and Ser128, polo-like kinase 1 (PLK1) phosphorylates cyclin B1 preferentially at Ser133 and possibly at Ser147. At the end of mitosis, cyclin B1 is targeted for degradation by the anaphase-promoting complex (APC), allowing for cell cycle progression. Research studies have shown that cyclin B1 is overexpressed in breast, prostate, and non-small cell lung cancer.

Specifications:

Clone:	CCNB1/1098
Source:	Mouse
Isotype:	IgG1k
Reactivity:	Human, mouse
Localization:	Cytoplasm, nucleus
Formulation:	Antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN3)
Storage:	Store at 2°- 8°C
Applications:	IHC, Flow Cyt., IF

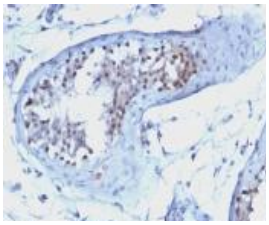
Package:

Description	Catalog No.	Size
Cyclin B1 Concentrated	MC0730	1 ml
Cyclin B1 Prediluted	MC0730RTU7	7 ml

IHC Procedure*:

Positive Control Tissue:	Tonsil, SqCC
Concentrated Dilution:	50-200
Pretreatment:	Tris pH9.0, 15 minutes using Pressure Cooker, or 30-60 minutes using water bath at 95°-99°C
Incubation Time and Temp:	30-60 minutes @ RT
Detection:	Refer to the detection system manual

* Result should be confirmed by an established diagnostic procedure.



FFPE human testicular carcinoma stained with anti-Cyclin B1 using DAB

References:

1. Dual-mode regulation of the APC/C by CDK1 and MAPK controls meiosis I progression and fidelity. Nabti I, et al. J Cell Biol 204:891-900, 2014.
2. Casein kinase 1d-dependent Wee1 protein degradation. Penas C, et al. J Biol Chem 289:18893-903, 2014.
3. Human parvovirus B19 infection causes cell cycle arrest of human erythroid progenitors at late S phase that favors viral DNA replication. Luo Y, et al. J Virol 87:12766-75, 2013.
4. The role of RING box protein 1 in mouse oocyte meiotic maturation. Zhou L, et al. PLoS One 8:e68964, 2013.

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