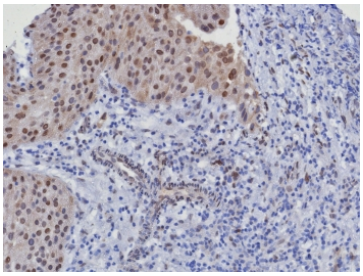
CDK4 Antibody / Cell Cycle G1-S Transition Regulator Antibody [clone CDK4/8351R] (V4296)

Catalog No.	Formulation	Size
V4296-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	100 ug
V4296-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced), 0.05% sodium azide	20 ug
V4296SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

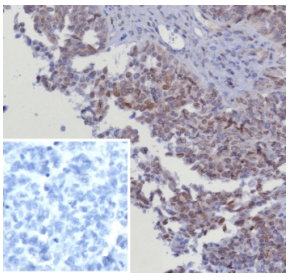
Recombinant RABBIT MONOCLONAL

Bulk quote request

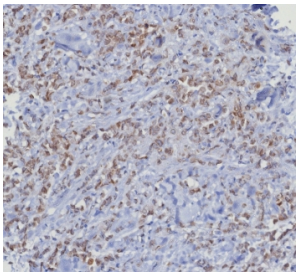
Availability	1-3 business days
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG, kappa
Clone Name	CDK4/8351R
Purity	Protein A/G affinity
UniProt	P11802
Localization	Nucleus, Cytoplasm
Applications	Immunohistochemistry (FFPE): 1-2ug/ml Western blot: 2-4ug/ml
Limitations	This CDK4 Antibody / Cell Cycle G1-S Transition Regulator Antibody is available for research use only.



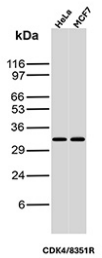
CDK4 Antibody Bladder Cancer IHC. Immunohistochemical analysis of Cyclin-dependent kinase 4 (CDK4) in formalin-fixed, paraffin-embedded human bladder cancer tissue using CDK4 antibody clone CDK4/8351R. Predominant nuclear staining is observed in tumor epithelial cells, consistent with the role of CDK4 in regulating G1 to S phase cell cycle progression, with additional weaker cytoplasmic signal in some cells. The staining pattern supports active cell cycle signaling in proliferating tumor regions. Required HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



CDK4 Antibody Ovarian Cancer IHC. Immunohistochemical analysis of Cyclin-dependent kinase 4 (CDK4) in formalin-fixed, paraffin-embedded human serous ovarian cancer tissue using CDK4 antibody clone CDK4/8351R. Predominant nuclear staining is observed in tumor epithelial cells, with additional weaker cytoplasmic signal, consistent with the role of CDK4 in regulating G1 to S phase cell cycle progression. The staining highlights proliferative tumor regions and supports active cell cycle signaling. Inset: PBS used in place of primary antibody serves as a negative control for secondary antibody binding. Required HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



CDK4 Antibody Breast Cancer IHC. Immunohistochemical analysis of Cyclin-dependent kinase 4 (CDK4) in formalin-fixed, paraffin-embedded human mammary cancer tissue using CDK4 antibody clone CDK4/8351R. Predominant nuclear staining is observed in tumor epithelial cells with variable cytoplasmic signal, consistent with the role of CDK4 in regulating G1 to S phase cell cycle progression. The staining pattern highlights proliferative tumor regions and supports active cell cycle signaling in breast carcinoma. Required HIER: boil tissue sections in pH 9 10mM Tris with 1mM EDTA for 20 min and allow to cool before testing.



CDK4 Antibody HeLa and MCF7 WB. Western blot analysis of Cyclin-dependent kinase 4 (CDK4) expression in cell lysates using CDK4 antibody clone CDK4/8351R. Lane 1: HeLa cell lysate, Lane 2: MCF7 cell lysate. A band is detected at approximately 33â€“34 kDa, consistent with the predicted molecular weight of CDK4, a key regulator of G1 to S phase cell cycle progression. Signal is observed in both cell lines, aligning with the known expression of CDK4 in proliferating cells.

Description

Cyclin-dependent kinase 4 (CDK4) is a serine-threonine kinase that serves as a central regulator of the G1 phase of the cell cycle and the transition into S phase. CDK4 functions through association with D-type cyclins to form active kinase complexes that phosphorylate the retinoblastoma protein (RB1), leading to release of E2F transcription factors and activation of genes required for DNA synthesis. CDK4 is localized in both the nucleus and cytoplasm of proliferating cells, where it integrates mitogenic signaling with cell cycle progression. The CDK4 Antibody is designed to detect this key regulatory kinase, supporting detailed analysis of cell cycle control and proliferative signaling pathways.

CDK4 antibody, also referred to as Cyclin-dependent kinase 4 antibody in the literature, recognizes a ubiquitously expressed protein in actively dividing cells, including epithelial cells, hematopoietic lineages, and tumor-derived cell lines. CDK4 expression is tightly regulated at multiple levels, including transcriptional control, cyclin availability, and interaction with cyclin-dependent kinase inhibitors such as p16INK4a. Western blot analysis typically detects CDK4 as a band at approximately 33Ã¢Â€Â“34 kDa, consistent with its predicted molecular weight, although additional lower-molecular-weight bands may be observed in some samples, reflecting proteolytic processing or non-specific reactivity under certain conditions.

Structurally, CDK4 contains a conserved protein kinase domain responsible for ATP binding and substrate phosphorylation, as well as regulatory regions that mediate interaction with cyclins and inhibitory proteins. Activation of CDK4 requires binding to cyclin D and phosphorylation at specific residues, while inhibition occurs through association with INK4 family proteins that block cyclin binding. This tightly controlled regulatory system ensures that CDK4 activity is restricted to appropriate phases of the cell cycle.

Functionally, CDK4 is a key node linking extracellular growth signals to intracellular proliferation machinery. Activation of CDK4 promotes RB1 phosphorylation and progression through the G1 restriction point, committing cells to DNA

replication. Because of this central role, CDK4 is frequently dysregulated in cancer through gene amplification, increased cyclin D expression, or loss of inhibitory proteins such as p16INK4a. These alterations lead to sustained CDK4 activity and uncontrolled cell division, making CDK4 a critical biomarker and therapeutic target in oncology.

In addition to its role in cancer, CDK4 activity reflects broader cellular proliferation states and is commonly used as a marker of cell cycle activity in experimental systems. Its expression is maintained in a wide range of proliferating cell types, including transformed cell lines such as Jurkat, HEK293T, and K-562, where consistent detection by western blot supports its utility in cell-based studies. The presence of CDK4 across diverse cellular contexts reinforces its importance in both normal physiology and disease.

Clone CDK4/8351R is a recombinant rabbit monoclonal antibody designed to detect CDK4 with high specificity and sensitivity. Its ability to reliably identify CDK4 in cell lysates and tissue samples supports applications in studies of cell cycle regulation, proliferation, and oncogenic signaling. This antibody provides a robust tool for investigating the molecular mechanisms that control cell division and for evaluating CDK4 as a target in cancer and other proliferative disorders.

This antibody is part of a broader antibody panel offered by NSJ Bioreagents.

Application Notes

Optimal dilution of the CDK4 Antibody / Cell Cycle G1-S Transition Regulator Antibody should be determined by the researcher.

Immunogen

A recombinant fragment corresponding to the N-terminal of human CDK4 protein was used as the immunogen for the recombinant CDK4 antibody.

Storage

Aliquot the CDK4 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

CDK4 antibody, Cyclin-dependent kinase 4 antibody, CDK4 cell cycle antibody, CDK4 proliferation marker antibody, CDK4 WB antibody

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