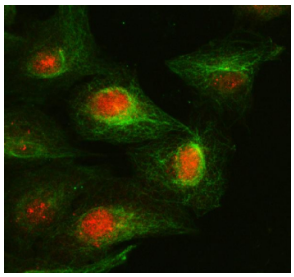
Cyclin A1 Antibody / CCNA1 (R32168)

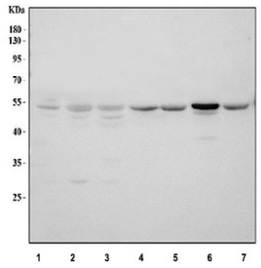
Catalog No.	Formulation	Size
R32168	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

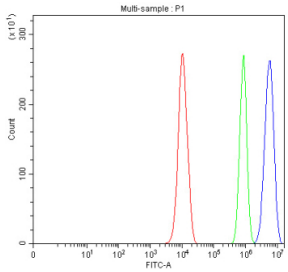
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P78396
Localization	Nuclear
Applications	Western blot: 0.5-1ug/ml Immunofluorescence (FFPE): 5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This Cyclin A1 antibody is available for research use only.



Immunofluorescent staining of FFPE human A549 cells with Cyclin A1 antibody (red) and Alpha Tubulin mAb (green). HIER: steam section in pH6 citrate buffer for 20 min.



Western blot analysis of Cyclin A1 (CCNA1) expression using Cyclin A1 antibody. Lane 1: human 293T whole cell lysates; Lane 2: human MCF-7 whole cell lysates; Lane 3: human HeLa whole cell lysates; Lane 4: rat kidney tissue lysates; Lane 5: rat testis tissue lysates; Lane 6: mouse kidney tissue lysates; Lane 7: mouse testis tissue lysates. The predicted molecular weight of Cyclin A1 is ~52 kDa, and a corresponding band is observed across cell lines and tissues, with stronger expression in testis samples.



Flow cytometry analysis of fixed and permeabilized human PC-3 cells with Cyclin A1 antibody at 1ug/million cells (blocked with goat sera); Red=cells alone, Green=isotype control, Blue= Cyclin A1 antibody.

Description

Cyclin A1 antibody targets Cyclin A1, encoded by the CCNA1 gene. Cyclin A1 is a member of the cyclin family of cell cycle regulatory proteins, which function by activating cyclin-dependent kinases (CDKs) to control orderly cell cycle progression. Cyclin A1 is predominantly localized to the nucleus, where it forms active complexes with CDK2 and CDK1 to regulate transitions through the S phase and G2-M phase of the cell cycle. Unlike the more ubiquitously expressed Cyclin A2, Cyclin A1 shows a more restricted and context-dependent expression pattern.

Functionally, Cyclin A1 plays a critical role in regulating DNA replication, cell cycle checkpoint control, and mitotic entry. Cyclin A1-CDK2 complexes are involved in the initiation and progression of DNA synthesis, while Cyclin A1-CDK1 activity contributes to proper G2-M transition. Through phosphorylation of downstream substrates, Cyclin A1 helps coordinate replication timing, chromatin dynamics, and cell division. A Cyclin A1 antibody supports studies focused on cell cycle regulation and proliferative control mechanisms.

CCNA1 expression is tightly regulated and is particularly prominent in germ cells, hematopoietic tissues, and certain stages of development. High Cyclin A1 expression has been documented in testicular germ cells and during spermatogenesis, where it is essential for meiotic progression. In somatic tissues, CCNA1 expression is generally low or absent under normal conditions but can be induced in specific cellular contexts, including stress responses or pathological states. This restricted expression profile distinguishes Cyclin A1 from other cyclins and underscores its specialized biological roles.

From a disease-relevance perspective, aberrant CCNA1 expression has been linked to malignancy, particularly in hematologic cancers and solid tumors. Overexpression or dysregulated activation of Cyclin A1 has been reported in acute myeloid leukemia and other cancer types, where it may contribute to uncontrolled proliferation and impaired differentiation. Additionally, CCNA1 promoter hypermethylation has been observed in several cancers, suggesting a complex role for Cyclin A1 in tumor biology that may vary by tissue and disease context. These findings have made Cyclin A1 an important target in cancer research and epigenetic studies.

At the molecular level, Cyclin A1 has an apparent molecular weight of approximately 52 to 55 kDa, although observed migration on SDS-PAGE may vary due to phosphorylation and cell cycle-dependent regulation. Cyclin A1 contains conserved cyclin box domains required for CDK binding and activation. Its expression and stability are tightly controlled through ubiquitin-mediated proteasomal degradation as cells progress through mitosis. A Cyclin A1 antibody supports research applications focused on cell cycle dynamics, cancer biology, and developmental regulation, with NSJ Bioreagents providing reagents intended for research use.

Application Notes

Optimal dilution of the Cyclin A1 antibody should be determined by the researcher.

Immunogen

Amino acids 64-263 of human Cyclin A1 were used as the immunogen for the Cyclin A1 antibody.

Storage

After reconstitution, the Cyclin A1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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