Cyclin A2 Antibody

Cat. No. CG1103

Applications:	**WB, IHC**
Detected MW:	**52 kDa**
Species & Reactivity:	**Human, Mouse, Rat**
Isotype:	**Rabbit IgG**

BACKGROUND

Cyclins are highly conserved proteins that activate cyclin-dependent kinases (CDKs) to regulate the cell cycle, transcription and other cellular processes. There are several different cyclins that are active in different parts of the cell cycle and that cause the Cdk to phosphorylate different substrates. There are also several "orphan" cyclins for which no Cdk partner has been identified. For example, cyclin F is an orphan cyclin that is essential for G_2/M transition. These cyclins can heterodimerize with specific catalytic subunits, Cdks, to form holoenzymes. Some substrates of these holoenzymes, which are inactivated upon phosphorylation, are pRB and the related proteins, p130 and p107. It is thought that phosphorylation and inactivation of pRB leads to progression through the restriction point.[1] The ability of the cyclin/Cdk holoenzymes to phosphorylate pRB is inhibited by a family of small molecular weight proteins, known as cyclin-dependent kinase inhibitors (CKIs). The concentration of cellular cyclins varies in a cyclical fashion during the cell cycle; they are produced or degraded as needed in order to drive the cell through the different stages of the cell cycle. When concentrations in the cell are low, cyclins dissociate from Cdk, thus inhibiting enzymatic activity.[2] Cyclins themselves have no enzymatic activity.

There are two subtypes of cyclin A, cyclin A1 and cyclin A2. Among the cyclins, cyclin A2 is unique in that it regulates progression through two critical transitions: cyclin A2 complexed with cdk2 is essential for the G_1/S transition and cyclin A2/cdk1 promotes entry into mitosis.[3] In contrast, meiotic cells (oocytes and spermatocytes) express cyclin A1. Cyclin A1 is proposed to regulate M phase in the meiotic cell cycle. Several lines of evidence have also implicated cyclin A in carcinogenesis.[4]

References:

1. Xiong, Y. & beach, D. Curr. Biol. 1:362-4, 1991
2. Pestell, R.G. et al: Endocrinol. Rev. 20:501-34, 1999
3. Chaudhry, H.W. et al: J. Biol. Chem. 279:35858-66, 2004
4. Payraudeau, V. et al: Mol. Cell. Endocrinol. 143:107-116, 1998

TECHNICAL INFORMATION

Source:
Cyclin A2 Antibody is a rabbit antibody raised against a short peptide from carboxyl-terminal sequence of human cyclin A2.

Specificity and Sensitivity:
This antibody detects endogenous cyclin A2 proteins without cross-reactivity with other family members.

Storage Buffer: Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

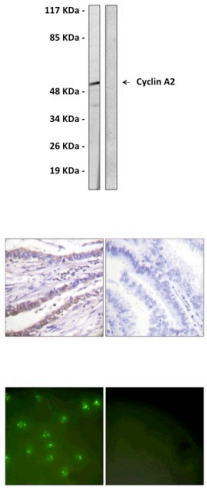
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1,000
IP	n/d
IHC	1:50-1:100
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA



Top: Immunoblotting analysis of extracts from COS7 cells, using Anti-Cyclin A antibody. The lane on the left was treated with the Anti-Cyclin A antibody. The lane on the right (negative control) was treated with both Anti-Cyclin A antibody and the synthesized immunogen peptide.
Middle: Immunohistochemistry analysis of paraffin-embedded human lung carcinoma tissue using Anti-Cyclin A antibody. Cells on the left were treated with the Anti-Cyclin A antibody. Cells on the right (negative control) were treated with both Anti-Cyclin A antibody and the synthesized immunogen peptide.
Bottom: Immunofluorescence of COS7 cells using Anti-Cyclin A antibody. Cells on the left were treated with the Anti-Cyclin A antibody. Cells on the right (negative control) were treated with both Anti-Cyclin A antibody and the synthesized immunogen peptide.