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Phospho-CDC25A(S178) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3046a

Product Information

Application	WB, IHC-P, E
Primary Accession	P30304
Reactivity	Human, Rat, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	59087

Additional Information

Gene ID	993
Other Names	M-phase inducer phosphatase 1, Dual specificity phosphatase Cdc25A, CDC25A
Target/Specificity	This CDC25A Antibody is generated from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding S178 of human CDC25A.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	Phospho-CDC25A(S178) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CDC25A
Function	Tyrosine protein phosphatase which functions as a dosage- dependent inducer of mitotic progression (PubMed:12676925, PubMed:14559997, PubMed:1836978, PubMed:20360007). Directly dephosphorylates CDK1 and stimulates its kinase activity (PubMed:20360007). Also dephosphorylates CDK2 in complex with cyclin-E, in vitro (PubMed:20360007).

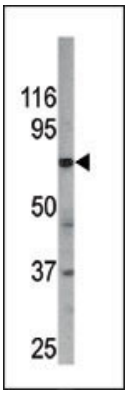
Background

CDC25A is a member of the CDC25 family of phosphatases. CDC25A is required for progression from G1 to the S phase of the cell cycle. It activates the cyclin-dependent kinase CDC2 by removing two phosphate groups. CDC25A is specifically degraded in response to DNA damage, which prevents cells with chromosomal abnormalities from progressing through cell division. CDC25A is an oncogene, although its exact role in oncogenesis has not been demonstrated. Two transcript variants encoding different isoforms have been found for this gene.

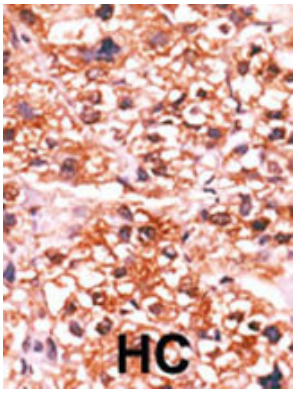
References

Ito, Y., et al., Int. J. Mol. Med. 13(3):431-435 (2004). Nemoto, K., et al., Prostate 58(1):95-102 (2004). Goloudina, A., et al., Cell Cycle 2(5):473-478 (2003). Chen, M.S., et al., Mol. Cell. Biol. 23(21):7488-7497 (2003). Chow, J.P., et al., Mol. Biol. Cell 14(10):3989-4002 (2003).

Images



The anti-Phospho-CDC25A-S178 Pab (Cat. #AP3046a) is used in Western blot to detect Phospho-CDC25A-S177 in mouse kidney tissue lysate



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- Mangrove dolabrane-type of diterpenes tagalsins suppresses tumor growth via ROS-mediated apoptosis and ATM/ATR-Chk1/Chk2-regulated cell cycle arrest.
- A eudesmane-type sesquiterpene isolated from Pluchea odorata (L.) Cass. combats three hallmarks of cancer cells: Unrestricted proliferation, escape from apoptosis and early metastatic outgrowth in vitro.
- Hsp90 stabilizes Cdc25A and counteracts heat shock-mediated Cdc25A degradation and cell-cycle attenuation in pancreatic carcinoma cells.
- Methanol extract of the ethnopharmaceutical remedy Smilax spinosa exhibits anti-neoplastic activity.
- An apolar extract of Critonia morifolia inhibits c-Myc, cyclin D1, Cdc25A, Cdc25B, Cdc25C and Akt and induces apoptosis.
- A novel N-hydroxy-N'-aminoguanidine derivative inhibits ribonucleotide reductase activity: Effects in human HL-60 promyelocytic leukemia cells and synergism with arabinofuranosylcytosine (Ara-C).
- Pro- and anticarcinogenic mechanisms of piceatannol are activated dose dependently in MCF-7 breast cancer cells.

- Berberine and a Berberis lycium extract inactivate Cdc25A and induce alpha-tubulin acetylation that correlate with HL-60 cell cycle inhibition and apoptosis.
- Short 42 degrees C heat shock induces phosphorylation and degradation of Cdc25A which depends on p38MAPK, Chk2 and 14.3.3.
- Carboxyl-terminal peptides as probes for Escherichia coli ribonucleotide reductase subunit interaction: kinetic analysis of inhibition studies.