



CDC25A Polyclonal Antibody

Catalog No	E91173	Lot Number	P00009
Applications	WB IHC	Quantity	100ul, 100ug/100ul
Cross-Reactivity	H M R	Calculated MW	59kDa

Immunogen Information

Immunogen	Recombinant protein of human CDC25A
Gene ID	993
Swiss Prot	P30304
Synonyms	CDC25A2; CDC25A; cdc25A

Product information

Species	Rabbit
Isotype	IgG
Purity	Affinity purification
Storage	Store at -20°C or -80°C. Avoid freeze / thaw cycles. Buffer: PBS with 0.02% sodium azide, 50% glycerol, pH7.3.

Background

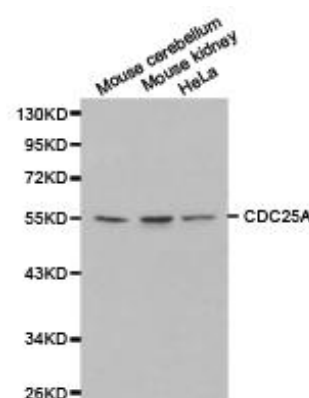
The cdc25 protein phosphatase family plays a critical role in activating cyclin-dependent kinases (CDKs) via dephosphorylation of conserved Thr14/Tyr15 inhibitory phosphorylation sites. While cdc25C is primarily responsible for activating CDK1 to overcome the G2/M checkpoint and allow mitotic entry, the primary substrate of cdc25A is CDK2, which, when active, allows progression through the G1/S and intra-S checkpoints (1). Abundance, subcellular localization and activity of cdc25A is tightly controlled by a variety of mechanisms, including phosphorylation, ubiquitination, and inhibitory binding to 14-3-3 proteins. During normal cell cycle progression, elevated c-Myc and E2F transcription factor levels lead to increased cdc25A expression (2). When conditions are favorable for DNA synthesis, cdc25A and CDK2 form an activation loop, wherein each activates the other enzyme (1). DNA damage, on the other hand, leads to multisite phosphorylation at inhibitory sites (Ser123, Ser177, Ser278, Ser292, and Thr506) by Chk1 and Chk2, which result in 14-3-3 binding and ubiquitin-mediated degradation (3,4).

References

1. Hoffmann, I. et al. (1994) EMBO J. 13, 4302-4310.
2. Vigo, E. et al. (1999) Mol. Cell. Biol. 19, 6379-6395.
3. Chen, M. et al. (2003) Mol. Cell. Biol. 23, 7488-7497.
4. Sorensen, C.S. et al. (2003) Cancer Cell 3, 247-258.

Recommended Dilutions

WB	1:500 - 1:2000
IHC	1:50- 1:200



Western blot analysis of extracts of various cell lines, using CDC25A antibody.