

**p57 Kip2 Antibody**

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC	H	Endogenous	57	Rabbit	#P49918	1028

**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation  
Immunofluorescence (Immunocytochemistry)

**Dilution**

1:1000  
1:50  
1:100

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at -20°C. Do not aliquot the antibody.

**Specificity/Sensitivity**

p57 Kip2 Antibody detects endogenous levels of total p57 Kip2 protein. The antibody does not recognize p27 Kip1.

**Source / Purification**

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to amino acids near the carboxy terminus of human p57 Kip2. Antibodies are purified by protein A and peptide affinity chromatography.

**Background**

p27 Kip1 is a member of the Cip/Kip family of cyclin-dependent kinase inhibitors. Like its relatives, p57 Kip2 and p21 Waf1/Cip1, the ability to enforce the G1 restriction point is derived from its inhibitory binding to CDK2/cyclin E and other CDK/cyclin complexes. Expression levels of p27 are upregulated in quiescent cells and in cells treated with cAMP or other negative cell cycle regulators. Downregulation of p27 can be induced by treatment with interleukin-2 or other mitogens; this involves phosphorylation of p27 and its degradation by the ubiquitin-proteasome pathway (1-4). p57 Kip2 (Cyclin-dependent kinase inhibitor 1C) functions as a tumor suppressor. Mutations of p57 Kip2 have been associated with numerous human malignancies as well as Beckwith-Wiedemann syndrome (BWS), characterized by an increased risk of childhood cancer. The amino-terminal CDK inhibitory domain, common to the family, binds to and inhibits CDK/cyclin complexes and restricts cell cycle progression (5). The unique central region of p57 Kip2 interacts with LIMK-1, a downstream effector of the Rho family of GTPases. By sequestering LIMK-1 in the nucleus, p57 Kip2 disrupts actin dynamics within cells and may be linked to its essential role in embryonic development (6). In addition, the carboxyl-terminal QT domain of p57KIP2 binds to and inhibits JNK/SAPK activity regulating cellular apoptosis and differentiation (7). Expression levels of human p57 Kip2 are more restricted than other CDK inhibitors (8) and are controlled by ubiquitination/degradation via the Skp1/Cul1/F-box-type E3 ubiquitin ligase complex SCF-Skp2. This effect is dependent on Thr310 (9). A similar threonine phosphorylation site in p27 Kip1, Thr187, has also been shown to regulate protein stability (10).

**Background References**

1. Lloyd, R.V. et al. (1999) *Am J Pathol* 154, 313-23.
2. Polyak, K. et al. (1994) *Genes Dev* 8, 9-22.
3. Kato, J.Y. et al. (1994) *Cell* 79, 487-96.
4. Vlach, J. et al. (1997) *EMBO J* 16, 5334-44.
5. Pateras, I.S. et al. (2009) *Mol Cancer Res* 7, 1902-19.
6. Yokoo, T. et al. (2003) *J Biol Chem* 278, 52919-23.
7. Chang, T.S. et al. (2003) *J Biol Chem* 278, 48092-8.
8. Lee, M.H. et al. (1995) *Genes Dev* 9, 639-49.
9. Kamura, T. et al. (2003) *Proc Natl Acad Sci U S A* 100, 10231-6.
10. Ishida, N. et al. (2000) *J Biol Chem* 275, 25146-54.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)

## Cross-Reactivity Key

**H:** Human

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