

**RBL1 (D3P3C) Rabbit mAb**

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

<b>Applications:</b> W, IP	<b>Reactivity:</b> H Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 121	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P28749	<b>Entrez-Gene Id:</b> 5933
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**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation

**Dilution**

1:1000  
1:200

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

**Specificity/Sensitivity**

RBL1 recognizes endogenous levels of total RBL1 protein. This antibody does not cross-react with the Rb or RBL2 proteins.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro341 of human RBL1 protein.

**Background**

The retinoblastoma (Rb) tumor suppressor family includes the retinoblastoma protein Rb (p105), retinoblastoma-like protein 1 (RBL1, p107), and retinoblastoma-like protein 2 (RBL2, p130). These Rb family proteins are referred to as "pocket proteins" because they contain a conserved binding pocket region that interacts with critical regulatory proteins, including E2F family transcription factors, c-Abl tyrosine kinase, and proteins containing a conserved LXCXE motif (1,2). In quiescent G<sub>0</sub> phase cells, active Rb proteins hypophosphorylate and bind to E2F transcription factors to repress transcription and inhibit cell cycle progression (1,2). Upon growth factor induction of quiescent cells, Rb proteins become hyperphosphorylated and inactivated by G1-phase cyclinD-cdk4/6, G1/S-phase cyclin E-cdk2, and G1/S-phase cyclin A-cdk2 complexes (1,2). Hyperphosphorylation of Rb proteins results in a loss of E2F binding and allows for transcriptional activation and cell cycle progression (1,2). In addition to regulating the cell cycle, Rb proteins regulate chromosome stability, induction, and maintenance of senescence, apoptosis, cellular differentiation, and angiogenesis (3).

Retinoblastoma-like protein 1 (RBL1, p107) interacts with E2F4 and E2F5 to recruit the DP, RB-like, E2F, and MuvB protein (DREAM) complex to E2F target genes to repress transcription of multiple genes required for progression into S phase and mitosis (4-6). Hypophosphorylation of RBL1 during cellular senescence is required for maintenance of senescent cells (7,8).

**Background References**

- Du, W. and Pogoriler, J. (2006) *Oncogene* 25, 5190-200.
- Giacinti, C. and Giordano, A. (2006) *Oncogene* 25, 5220-7.
- Indovina, P. et al. (2013) *J Cell Physiol* 228, 525-35.
- Moberg, K. et al. (1996) *Mol Cell Biol* 16, 1436-49.
- Takahashi, Y. et al. (2000) *Genes Dev* 14, 804-16.
- Smith, E.J. et al. (1996) *Mol Cell Biol* 16, 6965-76.
- Kapić, A. et al. (2006) *Cell Death Differ* 13, 324-34.
- Helmbold, H. et al. (2009) *Oncogene* 28, 3456-67.

**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

**Cross-Reactivity Key**

**H:** Human **Mk:** Monkey

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