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## RING1B (D22F2) XP® Rabbit mAb



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IF-IC, FC-FP, ChIP, ChIP-seq, C&R	H M R Mk	Endogenous	41	Rabbit IgG	#Q99496	6045

### Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10<sup>6</sup> cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Immunofluorescence (Immunocytochemistry)	1:250 - 1:1000
Flow Cytometry (Fixed/Permeabilized)	1:100 - 1:400
Chromatin IP	1:50
Chromatin IP-seq	1:50
CUT&RUN	1:50

### 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

RING1B (D22F2) XP® Rabbit mAb recognizes endogenous levels of total RING1B protein.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the full-length human RING1B protein.

### Background

The polycomb group (PcG) proteins contribute to the maintenance of cell identity, stem cell self-renewal, cell-cycle regulation, and oncogenesis by maintaining the silenced state of genes that promote cell lineage specification, cell death, and cell-cycle arrest (1-4). PcG proteins exist in two complexes that cooperate to maintain long-term gene silencing through epigenetic chromatin modifications. The first complex, Eed-Ezh2, is recruited to genes by DNA-binding transcription factors and methylates histone H3 on Lys27. This histone methyltransferase activity requires the Ezh2, Eed, and Suz12 subunits of the complex (5). Methylation of Lys27 facilitates the recruitment of the second complex, PRC1, which ubiquitinates histone H2A on Lys119 (6). PRC1 is composed of Bmi1 and RING1A (also RING1 or RNF1), both of which act to enhance the E3 ubiquitin ligase activity of an additional catalytic subunit RING1B (also RING2 or RNF2) (7). PcG proteins play an important role in the regulation of cell proliferation and senescence through repression of the p16 INK4A and p19 ARF genes and are required for maintenance of adult hematopoietic and neural stem cells, as well as embryonic stem cells (3,4,8-10).

### Background References

1. Boyer, L.A. et al. (2006) *Nature* 441, 349-53.
2. Lee, T.I. et al. (2006) *Cell* 125, 301-13.
3. Park, I.K. et al. (2003) *Nature* 423, 302-5.
4. Molofsky, A.V. et al. (2003) *Nature* 425, 962-7.
5. Cao, R. and Zhang, Y. (2004) *Mol Cell* 15, 57-67.
6. Wang, H. et al. (2004) *Nature* 431, 873-8.
7. Cao, R. et al. (2005) *Mol Cell* 20, 845-54.
8. Molofsky, A.V. et al. (2005) *Genes Dev* 19, 1432-7.
9. Jacobs, J.J. et al. (1999) *Nature* 397, 164-8.
10. Jacobs, J.J. et al. (1999) *Genes Dev* 13, 2678-90.

### 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**

**WB:** Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry)  
**FC-FP:** Flow Cytometry (Fixed/Permeabilized) **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq  
**C&R:** CUT&RUN

**Cross-Reactivity Key**

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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