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## Bmi1 (D42B3) Rabbit mAb

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

|   |                                |                                   |                            |                                      |                               |                               |
|---|--------------------------------|-----------------------------------|----------------------------|--------------------------------------|-------------------------------|-------------------------------|
| <b>Applications:</b><br>W, IP, IF-IC, ChIP,<br>ChIP-seq, C&R, C&T | <b>Reactivity:</b><br>H M R Mk | <b>Sensitivity:</b><br>Endogenous | <b>MW (kDa):</b><br>41, 43 | <b>Source/Isotype:</b><br>Rabbit IgG | <b>UniProt ID:</b><br>#P35226 | <b>Entrez-Gene Id:</b><br>648 |
|---|--------------------------------|-----------------------------------|----------------------------|--------------------------------------|-------------------------------|-------------------------------|

### 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<sup>®</sup> Enzymatic Chromatin IP Kits.

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

The CUT&Tag dilution was determined using CUT&Tag Assay Kit #77552.

| Application                              | Dilution     |
|--|--------------|
| Western Blotting                         | 1:1000       |
| Immunoprecipitation                      | 1:100        |
| Immunofluorescence (Immunocytochemistry) | 1:50 - 1:200 |
| Chromatin IP                             | 1:50         |
| Chromatin IP-seq                         | 1:50         |
| CUT&RUN                                  | 1:50         |
| CUT&Tag                                  | 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

Bmi1 (D42B3) Rabbit mAb recognizes endogenous levels of total Bmi1 protein.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with recombinant protein specific to the carboxy terminus of human Bmi1 protein.

### Background

The polycomb group (PcG) of proteins contributes 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 methyl-transferase activity requires the Ezh2, Eed, and Suz12 subunits of the complex (5). Histone H3 methylation on Lys27 facilitates the recruitment of the second complex, PRC1, which ubiquitinylates histone H2A on Lys119 (6). Bmi1 is a component of the PRC1 complex, which together with Ring1 strongly enhances the E3 ubiquitin ligase activity of the Ring2 catalytic subunit (7). Bmi1 plays an important role in the regulation of cell proliferation and senescence through repression of the p16 INK4A and p19 ARF genes and is required for maintenance of adult hematopoietic and neural 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).

|                               |   |
|-------------------------------|---|
| <b>Western Blot Buffer</b>    | 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.  |
| <b>Applications Key</b>       | <b>W:</b> Western Blotting <b>IP:</b> Immunoprecipitation <b>IF-IC:</b> Immunofluorescence (Immunocytochemistry)<br><b>ChIP:</b> Chromatin IP <b>ChIP-seq:</b> Chromatin IP-seq <b>C&amp;R:</b> CUT&RUN <b>C&amp;T:</b> CUT&Tag   |
| <b>Cross-Reactivity Key</b>   | <b>H:</b> Human <b>M:</b> Mouse <b>R:</b> Rat <b>Mk:</b> Monkey   |
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