

**CBX8 (D2O8C) Rabbit mAb**

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<b>Applications:</b> W, IP, ChIP, ChIP-seq, C&R, C&T	<b>Reactivity:</b> H M R Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 43, 48	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #Q9HC52	<b>Entrez-Gene Id:</b> 57332
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**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	1:200
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**

CBX8 (D2O8C) Rabbit mAb recognizes endogenous levels of total CBX8 protein.

**Species predicted to react based on 100% sequence homology**

Hamster, Bovine

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Gly344 of human CBX8 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: PRC1 and PRC2. PRC1 is a multi-subunit protein complex consisting of a combination of five core protein families: CBX, RING1, PHC, PCGF, and RYPB (5-7). Different combinations of protein family members lead to a diverse array of PRC1 complexes with distinct functions (8). At least two distinct classes of PRC1 complexes have been defined. The first class, known as canonical PRC1, contains RING1, PHC, PCGF and CBX protein subunits, but not RYPB (5-8). This class of PRC1 complexes requires PRC2 and H3K27Me3 for proper recruitment to target genes. CBX proteins mediate recruitment by binding to H3K27Me3. CBX8 in particular is required for repression of many lineage-specific genes during differentiation of hematopoietic stem cells and may play a role in activation of lineage-specific genes during differentiation of embryonic stem cells (9,10). The second class, known as variant PRC1, contains RYPB instead of CBX proteins (5-8). RYPB-containing PRC1 is recruited to chromatin independently of PRC2 and H3K27Me3. These variant PRC1 complexes can function independently of PRC2, or in some cases function upstream to recruit PRC2 complex to target genes.

**Background References**

- Boyer, L.A. et al. (2006) *Nature* 441, 349-53.
- Lee, T.I. et al. (2006) *Cell* 125, 301-13.
- Park, I.K. et al. (2003) *Nature* 423, 302-5.
- Molofsky, A.V. et al. (2003) *Nature* 425, 962-7.
- Tavares, L. et al. (2012) *Cell* 148, 664-78.
- Gao, Z. et al. (2012) *Mol Cell* 45, 344-56.
- Blackledge, N.P. et al. (2014) *Cell* 157, 1445-59.
- Luis, N.M. et al. (2012) *Cell Stem Cell* 11, 16-21.
- Klauke, K. et al. (2013) *Nat Cell Biol* 15, 353-62.
- Creppe, C. et al. (2014) *PLoS Genet* 10, e1004851.

**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 **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq **C&R:** CUT&RUN **C&T:** CUT&Tag

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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