

# PRODUCT INFORMATION



## RbBP5 (human, recombinant)

Item No. 10947

### Overview and Properties

**Synonyms:** RBQ3, Retinoblastoma binding Protein 5, SWD1, Set1c WD40 repeat protein, homolog  
**Source:** Recombinant protein expressed in *E. coli*  
**Amino Acids:** 2-538 (full length)  
**Uniprot No.:** Q15291  
**Molecular Weight:** 72.9 kDa  
**Storage:** -80°C (as supplied)  
**Stability:** ≥6 months  
**Purity:** *batch specific* (≥90% estimated by SDS-PAGE)  
**Supplied in:** 50 mM Tris, pH 8.0, containing 150 mM sodium chloride and 20% glycerol  
**Endotoxin Testing:** < 1.0 EU/μg, determined by the LAL endotoxin assay

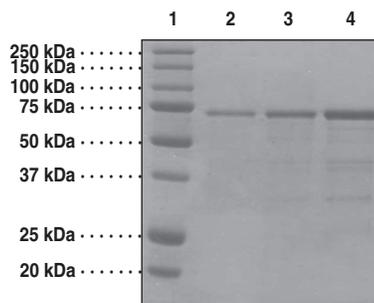
### Protein

**Concentration:** *batch specific* mg/ml

**Activity:** Activity was demonstrated by a radiometric assay of the MLL1/WAR complex (Ash2L, WDR5, RbBP5 and MLL1) (Item No. 10756) and MLL1/WARD complex (Ash2L, WDR5, RbBP5, MLL1, and DPY-30) (Item No. 10945) using [<sup>3</sup>H]-S-adenosylmethionine and Core Histones (Item No. 11010) which specifically methylates Histone H3.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image



Lane 1: MW Markers  
Lane 2: RbBP5 (1 μg)  
Lane 3: RbBP5 (2 μg)  
Lane 4: RbBP5 (5 μg)

WARNING  
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA  
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY  
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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## Description

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Retinoblastoma-binding protein 5 (RbBP5) is a ubiquitously expressed nuclear protein that contains WD40 repeat-like domains. RbBP5 binds directly to tumor suppressor retinoblastoma protein (RB) and regulates cell proliferation. Interaction of RbBP5 occurs preferentially with underphosphorylated RB through the E1A-binding pocket B.<sup>1</sup> RbBP5 is also an important component of the multi-subunit SET1 lysine methyltransferase protein complex, which includes MLL1.<sup>2</sup> RbBP5 interacts directly with WDR5 contributing to the activation of the MLL1 core protein complex.<sup>3-5</sup> MLL1-4 protein complexes catalyze the di- and trimethylation of histone H3 at lysine 4 (H3K4me2/me3), leading to the maintenance of global H3K4 trimethylation.<sup>6</sup>

## References

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1. Saijo, M., Sakai, Y., Kishino, T., *et al.* Molecular cloning of a human protein that binds to the retinoblastoma protein and chromosomal mapping. *Genomics* **27**, 511-519 (1995).
2. Steward, M.M., Lee, J.S., O'Donovan, A., *et al.* Molecular regulation of H3K4 trimethylation by ASH2L, a shared subunit of MLL complexes. *Nat. Struct. Mol. Biol.* **13(9)**, 852-4 (2009).
3. Avdic, V., Zhang, P., Lanouette, S., *et al.* Structural and biochemical insights into MLL1 core complex assembly. *Structure* **19(1)**, 101-108 (2011).
4. Odho, Z., Southall, S.M., and Wilson, J.R. Characterization of a novel WDR5-binding site that recruits RbBP5 through a conserved motif to enhance methylation of histone H3 lysine 4 by mixed lineage leukemia protein-1. *J. Biol. Chem.* **285(43)**, 32967-76 (2010).
5. Dou, Y., Milne, T.A., Ruthenburg, A.J., *et al.* Regulation of MLL1 H3K4 methyltransferase activity by its core components. *Nat. Struct. Mol. Biol.* **13(8)**, 713-9 (2006).
6. Wang, P., Lin, C., Smith, E.R., *et al.* Global analysis of H3K4 methylation defines MLL family member targets and points to a role for MLL1-mediated H3K4 methylation in the regulation of transcriptional initiation by RNA polymerase II. *Mol. Cell. Biol.* **29(22)**, 6074-85 (2009).

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