

The Complex of the Polycomb Group Proteins Ring1B (RNF2) and Bmi1 –A Structure-function-analysis-

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The Ring finger proteins Ring1B and Bmi1 belong to the Polycomb group proteins (PcG), which form large multimeric protein complexes. These complexes covalently modify histones leading to the transcriptional repression of specific genes. Mammalian homologs of Ring1B and Bmi1 are part of the PRC1L complex (Polycomb repressive complex 1-like), which acts as an E3 ligase in the ubiquitination of histone H2A [1].

Here we present the crystal structure of the Ring1B-Bmi1 Ring domain dimer at a resolution of 2.0 Å. The structure reveals that the interaction is mainly determined by structural elements that flank the Ring motifs. Details of the structure will be presented.

An *in vitro* ubiquitination assay was used to study E3 ligase activity of the Ring1B-Bmi1 complex. Adding either the full length Ring-Ring complex or the truncated form significantly activated ubiquitination of histone H2A.

[1] Wang H., Wang L., Erdjument-Bromage H., Vidal M., Tempst P., Jones R.S., Zhang Y., *Nature*, 2004, **431**, 873.

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