Polyhomeotic

National Cancer Institute

Source

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The Drosophila 'Polycomb' group (PcG) proteins form a large multimeric, chromatin-associated complex, repress gene expression, and are part of a system responsible for stable inheritance of gene activity. Polyhomeotic may interact with proteins bound to promoter complexes and negatively regulate homeotic and segmentation genes, and regulate the expression of other pair-rule genes such as EVE, FTZ, and H. The Drosophila PcG protein, polyhomeotic (Ph), contains a SAM domain and shares several motifs with mouse Rae28 protein. Rae28, Mel18, M33, and Bmi1 are components of a mouse multimeric protein complex. Human HPH1, HPH2, and BMI1 also appear to be part of a multimeric protein complex. HPH2 interacts with BMI1. Rae28/Mph1, HPH1, HPH2, and Ph share homology in the zinc finger domain and in homology domains I and II. Homology domains I and II may mediate the heterodimerization interactions of HPH1 and HPH2. (from OMIM, SWISS-PROT and NCI)