

## THE YETI GENE OF *DROSOPHILA* ENCODES A BCNT PROTEIN REQUIRED FOR CHROMOSOME ORGANIZATION

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Recent evidence indicate that the presence of transcribed genes in constitutive heterochromatin is a conserved trait that accompanies the evolution of eukaryotic genomes. Thus, the notion that heterochromatin is merely a synonymous of gene silencing has become obsolete. Our research is aimed at studying the functional aspects of constitutive heterochromatin in *Drosophila melanogaster*, by combining classical genetic and functional genomic approaches. One of the goals of our work is to explore the functions of the vital genes located in this enigmatic portion of the genome. In the present work, we have performed a functional analysis of *YETI*, a heterochromatin gene that encode a protein belonging to the evolutionarily conserved BCNT family, whose function is still unclear. We found that YETI binds to polytene chromosomes and, possibly via interactions with TIP60 chromatin remodeling complex, is responsible for proper deposition of H2Av on chromosomes. Moreover, our findings strongly suggest a conserved role in chromosome organization of the YETI protein and its human ortholog, CFDP1, which is extremely interesting in the light of the involvement of CFDP1 in complex developmental syndromes. Our study shed light on the function of YETI and CFDP1 proteins and may serve as unifying example of the key role played by the BCNT protein family in chromosome organization.