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I. ABSTRACT

Proteins Dma 1 and 2 in budding yeast *Saccharomyces cerevisiae* play an important role in DNA damage repair. In particular, we have examined the modification that occurs on histone H3, acetylation of K56, and analyzed how it influences gene expression in Dma 1 and 2 deficient strains of *S. cerevisiae*. We show that the lack of Dma 1 and 2 causes the downregulation of H3K56ac. Additionally, we show that the lack of Dma 1 and 2 has toxic phenotypic effects when plated on a drug assay with phleomycin. Finally, we look at the ability of suppressor colonies of the Dma proteins to survive on various levels of phleomycin.