CHARACTERIZATION OF A NOVEL RING-FINGER PROTEIN INVOLVED IN RIBOSOMAL RNA PROCESSING IN *SACCHAROMYCES CEREVISIAE*

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Ribosome biogenesis is a highly organized and dynamic process that initiates with the transcription of a 35S precursor rRNA, which undergoes extensive processing (cleavages and nucleotide modifications) by approximately 150 trans-acting factors, giving rise to the mature rRNAs. The objective of this work was to determine the function of a novel yeast protein, 323p. 323p interacts with Nop17p, previously implicated in pre-rRNA processing, and with Cef1p, part of the splicing NTC complex. Consistently with the protein interaction data, 323p localizes to the cell nucleus. In this work, a conditional strain was obtained (GAL::323), which is not able to grow when expression of the 323 gene is inhibited, indicating that this gene is essential for cell viability. Analysis of pre-rRNA processing in the conditional strain showed that the depletion of 323p causes the accumulation of the 35S pre-rRNA. These results led us to the conclusion that 323p is an essential factor involved in the early steps of the rRNA processing pathway. We were also able to identify the minimal functional domain of 323p, which is formed by the zinc- and ring-finger domains. Bioinformatics analysis showed that 323p is evolutionary conserved and has a putative human orthologue, which is now being tested for function.

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