

F332 Identification of a Putative DEAD-Box RNA Helicase and a Zinc-Finger Protein in *Candida albicans* by Functional Complementation of the *S. cerevisiae rok1* Mutation

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We identified two novel *Candida albicans* genes, *CHR1* and *CSR1*, by their complementation of *rok1* deletion mutation. *C. albicans* is an opportunistic human pathogen in immunocompromised individuals like AIDS patients. *S. cerevisiae* *ROK1* gene encoding a putative ATP-dependent RNA helicase of the DEAD protein family is required for the cell cycle progression and also for the rRNA processing. The *CHR1* gene product of 578 amino acids is highly homologous to the Rok1 protein and is considered to be a putative DEAD-box RNA helicase. The *CSR1* gene encodes a 70 kDa protein of 612 amino acids containing four Zn-finger motifs at the C-terminal region. When expressed in the *ROK1* expressing condition, *CHR1* and *CSR1* cloned in high-copy number plasmids showed slow-growth phenotypes, which was consistent with the lethal phenotype of the *ROK1* overexpression. We conclude that *CHR1* encodes a functional homologue of Rok1 protein and *CSR1* is a heterologous suppressor of the *rok1* mutation.

F333 Sequence Analysis of the ORFs Similar to the Transporter Genes and Their Implication for Hydrolytic Dechlorination of 4-Chlorobenzoate in *Pseudomonas* sp. DJ-12

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Dechlorination is one of the critical steps for degradation of chlorinated aromatics including 4-chlorobenzoate (4CBA). *Pseudomonas* sp. DJ-12 is a natural isolate capable of degrading 4CBA via hydrolytic dechlorination. The genes responsible for hydrolytic dechlorination of 4CBA were sequenced from chromosome of the organism and they are organized as an operon. The *fcba* (1518 bp), *B* (810 bp), and *C* (429 bp) genes encoding 4CBA-CoA ligase, 4CBA-CoA dehalogenase, and 4HBA-CoA thioesterase, respectively, were organized consecutively in the order *fcba*-*fcba*-*orf1*-*orf2*-*orf3*-*fcba* with unidentified orfs between the *fcba* and *fcba*. The orfs (981, 546, and 1320 bp) show the homology with transmembrane proteins (TRAP family), which are responsible for uptake of C4-dicarboxylate in *Rhodobacter capsulatus*. *orf1* encodes the periplasmic membrane protein. On the other hand, *orf2* and *orf3* encode the transmembrane proteins consisting of 4 and 12 transmembrane segments, respectively. As a result of the genetic organization, these genes are thought to be related to the transportation of 4-chlorobenzoate.