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A Carbon Starvation Gene of *Pseudomonas putida* Belongs  
to the Family of Two Component Regulatory Systems

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A carbon starvation gene(*cst114*) was cloned and sequenced from the mutant MK114, one of the starvation-driven gene mutants previously isolated from *Pseudomonas putida* ATCC 12633[Kim, Y., Watrud, L., and Matin, A. (1995) J. Bacteriol. 177, 1850-1859]. The putative amino acid sequences showed more than 70% similarity with PhoP and OmpR, which are members of the family of two component regulatory systems, involved in the pathogenicity and osmoregulation in *Salmonella typhimurium* and *Escherichia coli*, respectively. Long inverted repeated sequence was found near the promoter region of the *cst114*. Deletion analysis was performed to characterize and to identify the promoter region through two-step cloning procedure. Possible physiological role of the Cst114 in carbon sensing mechanism and in other stress responses are discussed.