

DNA sequence analysis of a small cryptic plasmid from *Lactococcus lactis* subsp. *lactis* M14

ABSTRACT

A small plasmid designated pAR141 was isolated from *Lactococcus lactis* subsp. *lactis* M14 and its complete 1594 base pair nucleotide sequence was determined. Analysis of the sequence indicated that this plasmid does not carry any industrially important determinants besides the elements involved in plasmid replication and control. The transcriptional repressor CopG and replication initiation protein RepB appeared as a single operon. A small countertranscribed RNA (ctRNA) coding region was found between the *copG* and *repB* genes. The double strand origin (dso) and single strand origin (sso) of rolling circle replicating (RCR) plasmids were also identified in pAR141, suggesting that this plasmid replicates by rolling circle (RC) mode. This observation was supported by S1 nuclease and Southern hybridization analyses.

Keyword: Cryptic plasmids, *Lactococcus lactis*, Replication, Rolling circle replicating plasmid