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Escherichia coli dicB operon includes a truncated IS2 element

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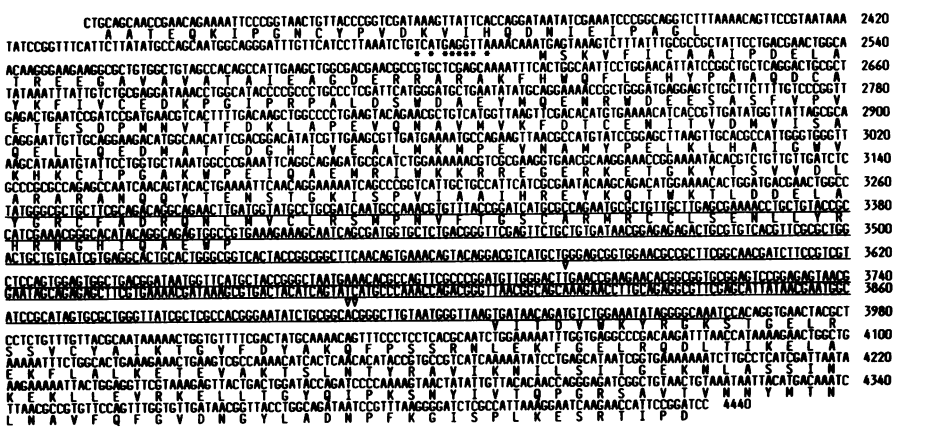
The *dicB* operon of *Escherichia coli* codes for an inhibitor of cell division and is under the mutually exclusive control of two repressor genes, *dicA* and *dicC*, which are related respectively to immunity genes *C2* and *cro* of bacteriophage P22 (1). We report the sequence of the 2.13 kb *Pst*I/*Bam*HI fragment located beyond gene *dicB*. This sequence was obtained, using conventional dideoxy methods, from two sets of plasmids generated by the method of Hong (2). ORF5, which follows immediately *dicB* (3), terminates at 2400. ORF5 is followed by a long ORF (2496 - 3413, ORF6), with a canonical SD sequence (asterisks) and a codon usage typical of highly expressed genes (4). ORF6 terminates within a segment (from base 3261 to 3965, underlined) identical to insertion sequence IS2 from bases 706 to 1 (5), except for base 3700 (T instead of G) and between bases 3909 and 3910 (G missing). This part of the sequence, which belongs to a 4.1 kb *Eco*RI fragment (6), is probably identical to the defective IS2 detected by Southern blot hybridization in most *E. coli* K12 strains (6). Another long ORF originates from within the IS2 at 3921 and extends at least to the *Bam*HI site. No rho-independent terminator seems to be present. We suggest that IS2 has inserted within the *dicB* operon as a consequence of the derivation of the *dicABC* region from a defective prophage, in a manner analogous to the inactivation of porin gene *nmpC*, of cryptic prophage Qsr', by an insertion sequence IS5 (8).



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