

Sequence analysis of the *iclR* gene encoding the repressor of the acetate operon in *Salmonella typhimurium*

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Growth of bacteria on acetate as a sole carbon source requires operation of the glyoxylate bypass (1) in connection with the expression of the polycistronic acetate (*ace*) operon (2, 3). This operon is under the transcriptional control of the *iclR* gene product (4). Recently the genes for the glyoxylate bypass enzymes of *Salmonella typhimurium* have been identified (5). Here we present the nucleotide sequence of the *iclR* gene located around the 90th min on the linkage map, betweeh the *aceK* and *metH* genes. The clones used for this analysis were obtained from a *Sau*3A partial digest cloned into the *Bam*HI site of the plasmid pBR328. Our results indicate that the *iclR* gene consists of 822 nucleotides encoding a protein of 29517 daltons.

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-50       -40       -30       -20       -10       +1        10        20        30        40        50        60
taattgaataaaacgaaaatgatttccacgatacagaaaaggagtctgccATGGTTGCCCCTGTTCCCGCGAAACGCGGGAGAAAACCTGCCGCTACCACTGCACCCGTAACCGGGCAG
                                                  MetValAlaProValProAlaLysArgGlyArgLysProAlaAlaThrThrAlaProValThrGlyGln
                                                  >iclR
70        80        90        100       110       120       130       140       150       160       170       180
GTTCAGTCATTAACTCGCGGTCTGAAGCTGCTGGAGTGGATTGCCGAGTCCAACGGCACGGTCGCGCTGACCGAACTGGCGCAACAGGCGGGTTTGCCTAATTCCTCGACTCACCGTCTA
ValGlnSerLeuThrArgGlyLeuLysLeuLeuGluTrpIleAlaGluSerAsnGlyThrValAlaLeuThrGluLeuAlaGlnGlnAlaGlyLeuProAsnSerSerThrHisArgLeu

190       200       210       220       230       240       250       260       270       280       290       300
CTCACCACCATGCAGCAGCAGGGTTTTGTCCGCCAGGTTGGTGAGCTGGGCCATTGGGCCGTAGGGCCACACGCGTTTATCGTCGGTAGCAGCTTCTTACAGAGCCGTAATCTGCTGGCG
LeuThrThrMetGlnGlnGlnGlyPheValArgGlnValGlyGluLeuGlyHisTrpAlaValGlyProHisAlaPheIleValGlySerSerPheLeuGlnSerArgAsnLeuLeuAla

310       320       330       340       350       360       370       380       390       400       410       420
ATTGTCCATCCGATTTTGCGCAAGCTGATGGAGGACTCCGGCGAAACGGTAAACCTTGCCGTACTCGACCAGAGCGACCATCAGGCTATTATTATCGACCAGGTGCAGTGCACACAATTG
IleValHisProIleLeuArgLysLeuMetGluAspSerGlyGluThrValAsnLeuAlaValLeuAspGlnSerAspHisGlnAlaIleIleIleAspGlnValGlnCysThrGlnLeu

430       440       450       460       470       480       490       500       510       520       530       540
ATGCGCATGTCCGCCCCTATTGGCGCAAGCTGCCCCATGCCAGCCTCTGGCGCGGGCAAGGCGTTTTTATCACAGCTCAGTGAGGAACAGGTTACCAGTCTGCTGCACCGCAAGGGGTTG
MetArgMetSerAlaProIleGlyAlaSerCysProMetProAlaSerGlyAlaGlyLysAlaPheLeuSerGlnLeuSerGluGluGlnValThrSerLeuLeuHisArgLysGlyLeu

550       560       570       580       590       600       610       620       630       640       650       660
CACGCTTATACCCATGCGACGCTGGTGTCGCCGCTGCATCTGAAAGATGACCTCGCCCAAACAGCCAAGCGCGGCTATTCCTTTGACGACGAAGAACATGCGCTCGGTCTGCGCTGCGTG
HisAlaTyrThrHisAlaThrLeuValSerProLeuHisLeuLysAspAspLeuAlaGlnThrAlaLysArgGlyTyrSerPheAspAspGluGluHisAlaLeuGlyLeuArgCysVal

670       680       690       700       710       720       730       740       750       760       770       780
GCCTCGTGTATTTATGACGAACACCGCGAACCGTTTGCGGCCCTCTCTATTTCCGGCCCCCGTTCACGCATTACCGACGATCGCGTCACCGAACTTGGCGCCATGGTGATTAAAGCGGCG
AlaSerCysIleTyrAspGluHisArgGluProPheAlaAlaLeuSerIleSerGlyProArgSerArgIleThrAspAspArgValThrGluLeuGlyAlaMetValIleLysAlaAla

790       800       810       820       830       840       850       860       870       880       890
AAAGAGGTAACGCTGGCCTATGGTGGAACTCGCTGAaatgagcagcctgaaattatactggcaggagaagtacccacaggccttctgttggtctttcggtgattcgccgg
LysGluValThrLeuAlaTyrGlyGlyThrArgTer
                              iclR<
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