Sequence of the Bacillus caldotenax and Bacillus stearothermophilus lctB genes

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The sequence of the B.caldotenax lctB gene is compared with that of B.stearothermophilus. The lctB genes are 81% homologous and thus there are 76/402 nucleotide differences. The deduced amino acid sequences of the lctB gene ORFs are 97% homologous and there are only 17/134 amino acid differences.

MD Y A F L G I V A A V L L G S I T S L
ATG GAT TAC GCC TTT GCC ATT GTT GCC GCC GTA CTC GCC AGC ATC ACC TOG CT T

W T V R V Q A T H R K S L D S L W V L V
TGG ACA GTG GCC TTT GCC AGC CAT GCC TCA GCC TGT AGC TTA TGG GTT CTC GTC
C A A A C C C T T G T

Q W Y L T M L L G F A M I Y M I L O V N
CA A T T A T A T A C A G G T A C A C C A G G G G C A G A

G H A V F T S P S N S A S K D R L S L L
GCC CAT GCT GTG TTT ACC CCA TCC CCA AAT AGC GCA TOG AAA GAT COT TGG TGG CTC CTT
C A T G A G C T G A G G A C C C T A G H

E D S L Y L S G M T V L S V G Y G D V T
GAA GAC AGC TTA TTA AGC GAT TGG AGC CCT TGG GTG GCC GAA TAC GAT GTC ACT
T C C C C C C C C

P I G V G R W I A I A E A L V G Y I M P
CCG ATC GCC GTC GGC CCG TOG ATC GCC ATT GCC GAA GCC GCT GCC GTC GCC TAC ATT ATG CCC
G A C G G C T

V I L

A V I V T R T V F D W D H R *
GCT GTC ATC GTG AGC GCC ACC CTG TTT GAC TGG CAT GCC TGA
T C G A C G C T

Legend: The B.caldotenax and B.stearothermophilus lctB genes were cloned (1,2) as 4.2-kb PstI-HindIII fragments. The genes are located 171 and 163 nucleotides respectively downstream from the stop codon of the corresponding lctA genes which encode L-lactate dehydrogenase. The sequence shown in full is that of the B.caldotenax lctB gene and ORF. Nucleotide and amino acid differences in the B.stearothermophilus lctB gene and ORF are shown below the relevant sequence. The sequences shown were determined on both strands by sequencing random subfragments cloned into M13mp8 by the dideoxy method.

References: