Nucleotide sequence of the mustard chloroplast genes trnH and rps19'

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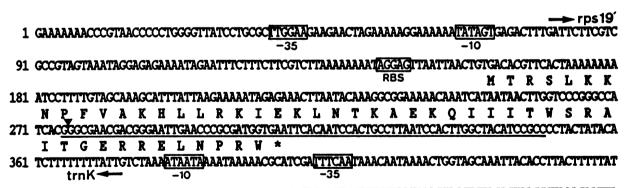
A 540-ntd mustard chloroplast region containing the genes trnH for tRNA^{His} and rps19' for a 6.8 kDa derived polypeptide with similarity to E. coli ribosomal protein S19 (S1) has been sequenced. The two genes are encoded by opposite DNA strands and overlap in part. They are located downstream of the psbA gene (2) at the junction between the large single copy region and the right-hand inverted repeat, which resembles the situation e.g. in maize (3), soybean (4), tobacco (5), and spinach (6). Sequence comparison of the polypeptide derived from mustard rps19' with those derived from rps19' and rps19 of spinach and tobacco (6, 7) shows 85-87% sequence conservation for the first 39 (Nterminal) residues, whereas no homologies could be found for the remaining 10 amino acids, indicating that codon 39 marks the junction between the single copy region and the right-hand inverted repeat. The mustard tRNA^{His} sequence shows 97% and 96% conserved nucleotide positions with those of spinach and tobacco, respectively. In contrast to rps19' where the upstream region reveals '-35' and '-10' elements that are identical in several plant species (3-7), the *trnH* 5' flanking region shows little sequence conservation. Although both (-35/-10) and (internal) 'A/B box' (8) motifs can be assigned, the possibility exists that the trnH gene does not have a functional promotor and is cotranscribed with *psbA in vivo* (9).

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451 MGAAAAAAAAGAGCAATATAAGCCTTGAAAAGAAGGCTTATATGGCTCGTTTTTTTAATAAACTAGGTCTAGACTAAGGCTAAAGAATTA