**THE LEUCINE MOTIF IN SUBUNITS 6 AND 9 OF PLANT MITOCHONDRIAL ATP SYNTHASE PROVIDING PRESUMABLY THE ASSEMBLY OF THE MEMBRANE PART OF THE ENZYME.**

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It has been previously shown that the leucine motif -L-X9-L-in the amino acid sequence of the subunit 9 of mitochondrial ATP synthase has a highly conservative organization in different plant species which is maintained by mRNA editing (1). The aim of the present work was to search and characterize this leucine motif in the amino acid sequence of the subunit 6 of the plant mitochondrial ATP synthase which belongs together with the subunit 9 to the two most hydrophobic proteins in the composition of the F0-subcomplex of this enzyme.

The subunit 6 has also been found to contain the leucine motif, the nucleus of which is the sequence -L(290)-X9-L-X9- M-X9-L-X9-L-X9-L(340)- localized in the C-terminal part of the protein. The only difference of the structure of the repeat from that in the subunit 9 is an apparent irregularity in the motif as a result of the presence of methionine residue in the position 320. However, hydrophobic amino acid, methionine possesses a rather long side chain and similar to leucine can provide interprotein interactions as in case of proteins with leucine zipper. Particular copies of the leucine repeat are localized in the N-terminal and central part of the molecule and in some cases they are formed involving mRNA editing. The detection of the leucine motif of a similar structure in two hydrophobic subunits of the ATP synthase suggests the functional importance of this amino acid repeat. It is assumed that the leucine repeat -L-X9-L- provides the assembly of membrane subunits in the composition of the F0-subcomplex of the mitochondrial ATP synthase.

1. Konstantinov, Yu.M. and Moller, I.M. (1994) FEBS Lett. 354, 245-247.