

L-Amino Acid Oxidases with Specificity for Basic L-Amino Acids in Cyanobacteria

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The two closely related fresh water cyanobacteria *Synechococcus elongatus* PCC 6301 and *Synechococcus elongatus* PCC 7942 have previously been shown to constitutively express a FAD-containing L-amino acid oxidase with high specificity for basic L-amino acids (L-arginine being the best substrate). In this paper we show that such an enzyme is also present in the fresh water cyanobacterium *Synechococcus cedrorum* PCC 6908. In addition, an improved evaluation of the nucleotide/amino acid sequence of the L-amino acid oxidase of *Synechococcus elongatus* PCC 6301 (encoded by the *aoxA* gene) with respect to the FAD-binding site and a translocation pathway signal sequence will be given. Moreover, the genome sequences of 24 cyanobacteria will be evaluated for the occurrence of an *aoxA*-similar gene. In the evaluated cyanobacteria 15 genes encoding an L-amino acid oxidase-similar protein will be found.

Key words: Cyanobacteria, L-Amino Acid Oxidase, *Synechococcus elongatus* PCC 6301 and PCC 7942