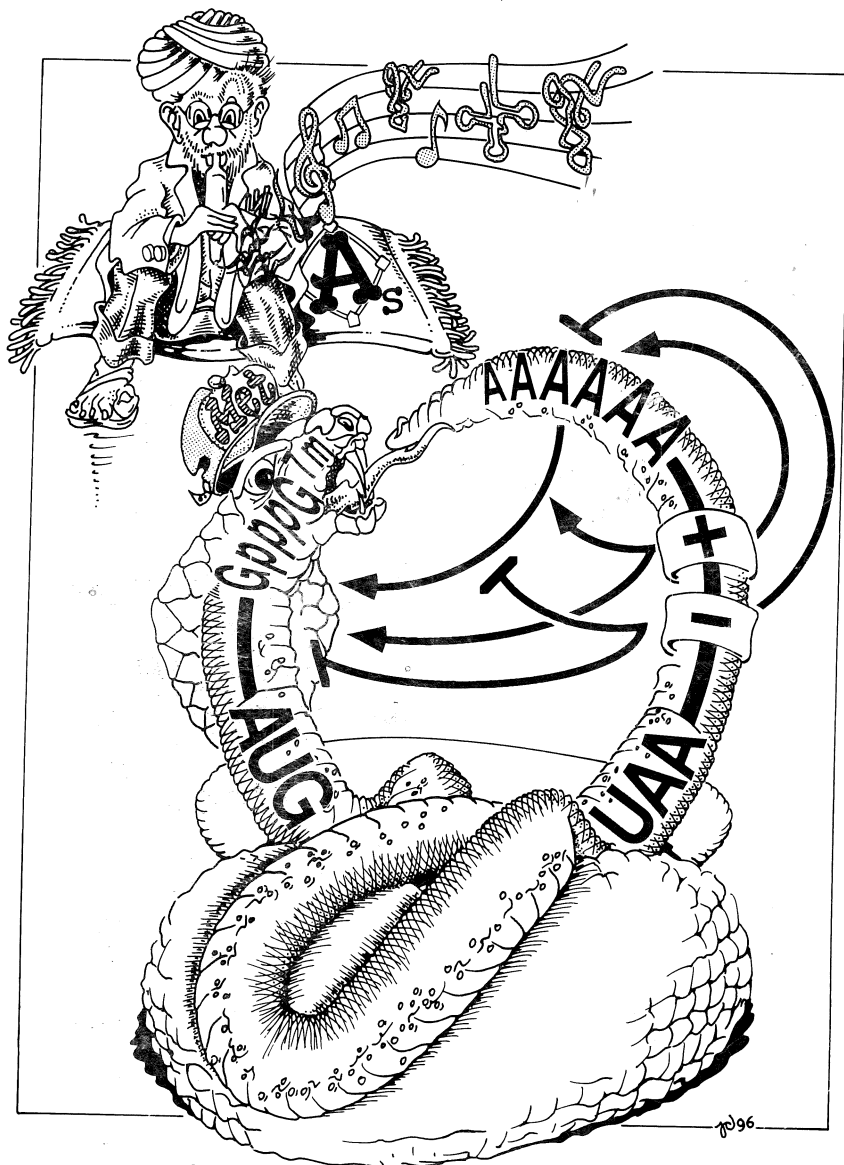


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FEATURES OF THE GENE 60 NASCENT PEPTIDE, AN *IN CIS* ELEMENT OF THE TRANSLATIONAL BYPASS

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Bacteriophage T4 gene 60 coding sequence contains a untranslated segment of 50 nt, which is bypassed by translating ribosomes in a take off and landing manner. Several elements are necessary for an efficient bypass; among them, a specific sequence of the nascent peptide recently synthesized acts as an *in cis* element; and it is strictly required for the hop. It has been proposed that the nascent peptide enable the ribosome for the hop where is still inside the ribosome, in the exit channel.

A core important for the function of the peptide has been previously identified (MKKYKLQNNVRRSIKSSS) (1). We have made directed mutagenesis of this region, and along the rest of the peptide, to identify specific sequence features in it.

The results can be summarized as follows: the positively charged amino acids seem not related to the function of the peptide; within the peptide, there is a important fragment (KYKL), where the tyrosine play the most important role. The predicted alpha-helix in this region does not correlate with some severe mutants, which do not break the helix. The relatively high hydrophilicity of the nascent peptide does not seem important either for the function.

We conclude that the action of the nascent peptide does not require a very specific amino acid, but the 18 amino acid sequence as a whole; however, some important amino acids can be determined in the fragment KYKL.

1.- Weiss, R.B. *et al.* (1990) A nascent peptide is required for ribosomal bypass of the coding gap in bacteriophage T4 gene 60. Cell 62:117-126.