CHEMICAL SYNTHESIS OF OLIGONUCLEOTIDES - PRIMERS FOR AMPLIFICATION OF THE PNP GENE OF THE *Escherichia coli* BY THE PHOSPHORAMIDITE METHOD

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Nucleoside phosphorylases (NPs) are widely applied for the synthesis of modified nucleosides, which have used as potential antiviral, anticancer and antibacterial drugs. In recent years, *E. coli* purine nucleoside phosphorylases (PNP) have attracted increasing interest as a biocatalyst for the synthesis of purine-type nucleosides [1]. For obtaining of genetically engineered PNP, it is first necessary to designthe specific primers for the amplification of nucleotide sequence of the PNP gene. The aim of this study was forconstruction and chemical synthesis of primers specific for the *E. coli*PNP geneusing the phosphoramidite method.This method involves the use of a solid support, such as controlled-pore glass (CPG), to which the oligonucleotide is covalently attached through a linker. The phosphoramidite method is carried out in stages, with each nucleotide added to the growing oligonucleotide chain in a certain order.

The structure of synthesized oligonucleotides as follows:

Forward – 5’- CCAAGAATTCATGGCTACCCCACACATTAATGC -3’

Reverse – 5’-CTTGTCTAGATATTACTCTTTATCGCCCAGCAGAAC -3’

andsuitable for the full-length amplification of PNP gene on the base of comparison of *Escherichia* genome sequences from the open NCBI database(NCBI Reference Sequence: NC_000913.3).

Literature

1. Zhou X., Szeker K.,et al. Recombinant purine nucleoside phosphorylases from thermophiles: Preparation, properties and activity towards purine and pyrimidine nucleosides. FEBS J. 2013; 280, 1475-1490.