Specific cleavage of DNA by the ultrasound: the effect of DNA sequence

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# Introduction

The DNA function is determined by specific properties of sequence, structure and dynamics of the double DNA helix. In our previous work [1, 2. 6] we developed a new method for the analysis of ultrasonic cleavage patterns of DNA sugar-phosphate backbone. We obtained estimates of relative cleavage frequencies at the central bond in each of the 16 dinucleotides, NN (where N=dAMP, dCMP, dGMP, dTMP). The goal of this study is to examine not only the influence of the dinucleotide type (factor A) but characterize the effect of specific sequence of the DNA fragment on cleavage frequency (factor B). The levels of factor A were fixed, whereas the levels of factor B were regarded as random. We estimated the fraction of variance explained by the random factor, DNA sequence. The contribution of random factor, DNA sequence, to explain relative frequency variance is much smaller than the contribution of dinucleotide type.

**References**

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