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Influence of electromagnetic millimeter waves irradiation on microbiological secretion of xathan exopolysaccharide

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Abstract

Cultivation of bacteria *Xanthomonas campestris* subjected to electromagnetic irradiation of extremely high frequencies (EHF) has been carried out. It has been shown that millimeter (mm) range radiation renders influence on bioweight concentration and changes viscosity of cultivation liquid. Stimulating and inhibiting frequencies are found out. The research of structure – dynamical parameters behavior of the obtained xathan exopolysaccharide samples is fulfilled by method of nuclear magnetic resonance relaxation. The explanation of the discovered differences in structure and macromolecular mobility has been offered. The assumption has been made that electromagnetic radiations of extremely high frequencies influence the mechanisms and (or) conditions of elementary acts of polymer chains lengthening and branching reactions during secondary metabolites secretion by *Xanthomonas campestris* bacteria.