

The Modeling of Viscous Microenvironment for the Coupled Enzyme System of Bioluminescence Bacteria

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Abstract : Effect of viscosity of media on kinetic parameters of the coupled enzyme system NADH:FMN-oxidoreductase-luciferase was investigated with addition of organic solvents (glycerol and sucrose), because bioluminescent enzyme systems based on bacterial luciferases offer a unique and general tool for analysis of the many analytes and enzymes in the environment, research, and clinical laboratories and other fields. The possibility of stabilization and increase of activity of the coupled enzyme system NADH:FMN-oxidoreductase-luciferase activity in vicious aqueous-organic mixtures have been shown.

Keywords : coupled enzyme system of bioluminescence bacteria NAD(P)H:FMN-oxidoreductase-luciferase, glycerol, stabilization of enzymes, sucrose

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