

Microbiology (Russian Federation) 2013 vol.82 N4, pages 423-427

Effect of exogenous and endogenous nitric oxide on biofilm formation by *Lactobacillus plantarum*

Yarullina D., Vakatova L., Krivoruchko A., Rubtsova E., Ilinskaya O.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Biofilms are a widespread form of occurrence of microorganisms in nature, and understanding the mechanism of regulation of their formation is of unquestionable practical significance for medicine and biotechnology. In the present work, the effect of nitric oxide (NO) on biofilm formation by *Lactobacillus plantarum* was investigated and the micromolar concentrations of exogenous NO were shown to have a negative effect on this process due to its toxic effect on the cells. However, the decrease in the level of endogenous NO in bacteria in the presence of a nitric oxide scavenger 2-(4-carboxyphenyl)-4,4,5,5-tetramethylimidazoline-1-oxyl-3-oxide (cPTIO) impaired the characteristics of the forming biofilms, as was evident from the decrease in their size. © 2013 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S0026261713040140>

Keywords

biofilms, lactobacilli, nitric oxide