ФИНАНСИРОВАНИЕ РАБОТЫ

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СОБЛЮДЕНИЕ ЭТИЧЕСКИХ СТАНДАРТОВ

Настоящая статья не содержит каких-либо исследований с использованием животных в качестве объектов.

КОНФЛИКТ ИНТЕРЕСОВ

Авторы заявляют, что у них нет конфликта интересов.

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Visualization of *Escherichia coli* Single Cells in the State of SOS Response Using Expansion Microscopy

N. A. Rumyantseva[a], D. M. Golofeeva[a], I. E. Vishnyakov[b, *], and A. D. Vedyaykin[a]

[a]Peter the Great St. Petersburg Polytechnic University, NIK "Nanobiotechnologies", St. Petersburg, 195251 Russia

[b]Institute of Cytology RAS, St. Petersburg, 194064 Russia

**e-mail: innvish@incras.ru*

Expansion microscopy (ExM) is a sample preparation method that allows to achieve improved visualization of structures due to the physical expansion of the sample. This method is used in combination with traditional light microscopy and allows, without the use of complex technical devices typical for super-resolution microscopy, to achieve visualization of biological structures with higher resolution. Unlike the methods of super-resolution micros-

copy, expansion microscopy does not make it possible to overcome the diffraction limit; however, the observed effect can be considered equivalent to an increase in the spatial resolution. The relative simplicity of the method and the undemanding nature of the microscope used have made expansion microscopy a fairly popular method to visualize various biological structures last time. This paper describes the use of expansion microscopy to visualize DNA and structures formed by the FtsZ protein in *Escherichia coli* cells during the SOS response. The results of the work confirm the previously obtained data that the FtsZ protein in cells in the state of the SOS response is unevenly distributed. The protocol used in this work for visualization of *E. coli* cells preliminarily fixed on the glass surface using the expansion microscopy method can be used in the future to study the internal structures of other cells, both bacterial and eukaryotic.

Keywords: expansion microscopy, FtsZ, SOS response, bacterial division