

Fluorescent photoconvertible polymer markers for individual cell labeling

Ilya O. Kozhevnikov¹, Artem A. Bakal¹, Polina A. Demina¹

¹ Saratov State University, Saratov, Russia

Cell fluorescent markers are widely used in bioimaging, fluorescent microscopy and visualization systems. Such markers allow us tracking both individual cells and entire cells populations. At the moment, there are markers that imply gene modification, which can lead to spontaneous mutation and change in the properties of the original cell culture. Here fluorescent photoconvertible markers were proposed to be an alternative and promising instrument for labeling and tracking individual cells. These markers based on polymeric microcapsules and fluorescent stable dye rhodamine B were demonstrated low cytotoxicity and stable fluorescent signal. The dependence of the photoconversion efficiency on the parameters of the photoconversion process were established. A mechanism for the photoconversion of fluorescent polymeric markers was proposed.

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