A lipid supported fluorescence encoding nucleic acids particulates as a novel bioimaging module

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Recent emerging technologies in medicine are primarily focusing on new diagnostic material with intrinsic biocompatibility and specific selectivity and strong intensity. Several bio-inspired hybrid materials containing natural biomolecules fused with either fluorescent organics or inorganics have been intensively considered for the design of new diagnostic tool kits. Inspired by these advances, we sought to design a synthetic lipid supported fluorescence encoding nucleic acids particle, resembling a natural and biofriendly light-emitting bacterial cells. It composed of outer lipid components and inner fluorescence labelled DNA genomes interfacing with PLGA biodegradable polymeric walls, which is similar to the subdivisions of the green-color emitting bacteria. By the evaluation of the external morphologies of the particulates and its photon emissions, it was confirmed that they were in microscaled spherical shapes and its components were specifically and distinctly color-labeled. It is highly speculated that, besides its bioimaging applications, it may have potentials at the field of biomimetic engineering owing to the design strategies.