

Synthetic lipid nanoparticles or extracellular vesicles for RNA delivery

Extracellular vesicles can transfer biological cargo between cells, including RNA. It may be an attractive alternative to synthetic delivery system for RNA. I will present a couple of examples of successful transfer by natural vesicles and synthetic lipid nanoparticles in the framework of a project on regeneration of the heart after myocardial infarction. One of the difficulties in comparing the efficiency of both systems was the lack of an assay for quantitative read-out of functional delivery. We recently developed the CROSS-FIRE system based on CRISPR/Cas9 mediated editing that allows to quantitatively compare these systems based on color change of fluorescent reporter proteins.