Synthetic mRNAs as optimised tools for stem cell generation and for manipulating cellular phenotypes

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Availability of high quality synthetic mRNAs (syn-mRNAs) has enabled progress in their applications. Important structural features, alternative technical options for high-amount, high-quality mRNA synthesis and GMP-compliant manufacturing and quality requirements are presented. Requirements in the application of mRNA-mediated manipulation of cells are presented (i) mRNA-directed expression of antigens in dendritic cells for vaccination projects in oncogenesis, infectious disease and allergy prevention; (ii) reprogramming of human fibroblasts to induced pluripotent stem cells with their subsequent differentiation to the desired cell type; (iii) applications in gene therapy.

Biography

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