

Special Issue

Trends in mRNA Vaccine Development and Applications

Message from the Guest Editor

Since the roll-out of mRNA-lipid nanoparticle (LNP)-based COVID-19 vaccines in 2020, billions of people have been immunized with this type of vaccine, representing a novel technology platform to fight infectious diseases. Pfizer-BioNTech's Comirnaty and Moderna's Spikevax, the lead mRNA-LNP formulations, trigger immune responses that effectively reduce the pathogenicity of SARS-CoV-2, saving millions from severe illness or death. The mechanism of this benefit, details of these vaccines' structure and function, as well as their side effects have been the subjects of unprecedented scientific and public attention, yet novelties in these fields emerge each day. Many believe that technology will surpass all other approaches of gene and pharmacotherapy, but there is also a lot of scientific and public discussion of presently ill-understood adverse effects, of which clarification is necessary to secure safe beside efficacy. The goal of this Special Issue of *Pharmaceutics* is to provide a 2024 update on the most recent developments and prospects in this field. Original research data and comprehensive reviews are all welcome to be submitted to this Special Issue.

Guest Editor

Prof. Dr. Janos Szebeni

Nanomedicine Research and Education Center, Institute of Translational Medicine, Semmelweis University, 1089 Budapest, Hungary

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Pharmaceutics
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
pharmaceutics@mdpi.com

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Prof. Dr. Patrick J. Sinko

Ernest Mario School of Pharmacy, Rutgers, The State University of New Jersey, William Levine Hall, Room 225C, 160 Frelinghuysen Road, Piscataway, NJ 08854-8020, USA

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