



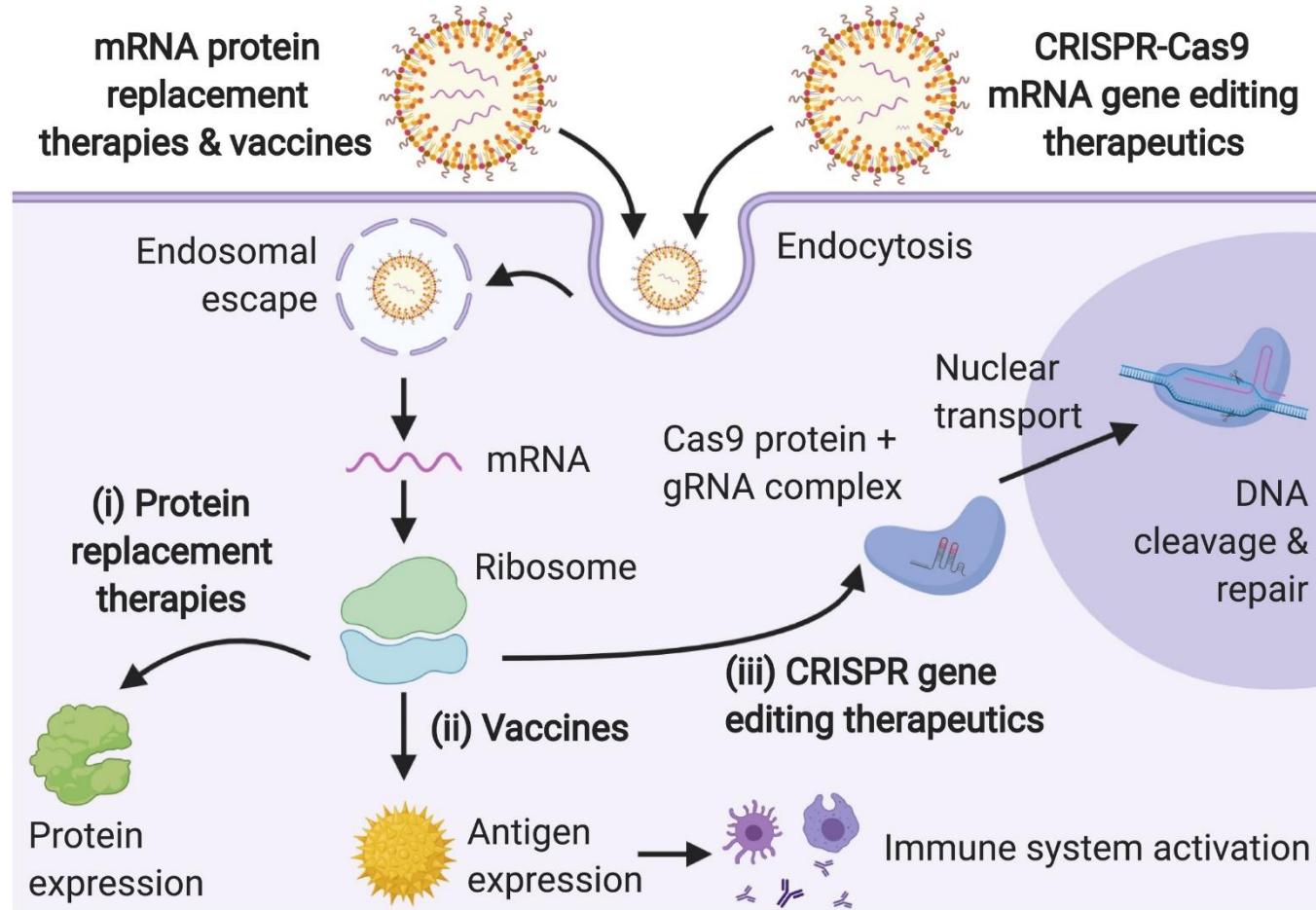
Methods in Drug Development

# **siRNA Therapeutics and Lipid Nanoparticle Drug Delivery**

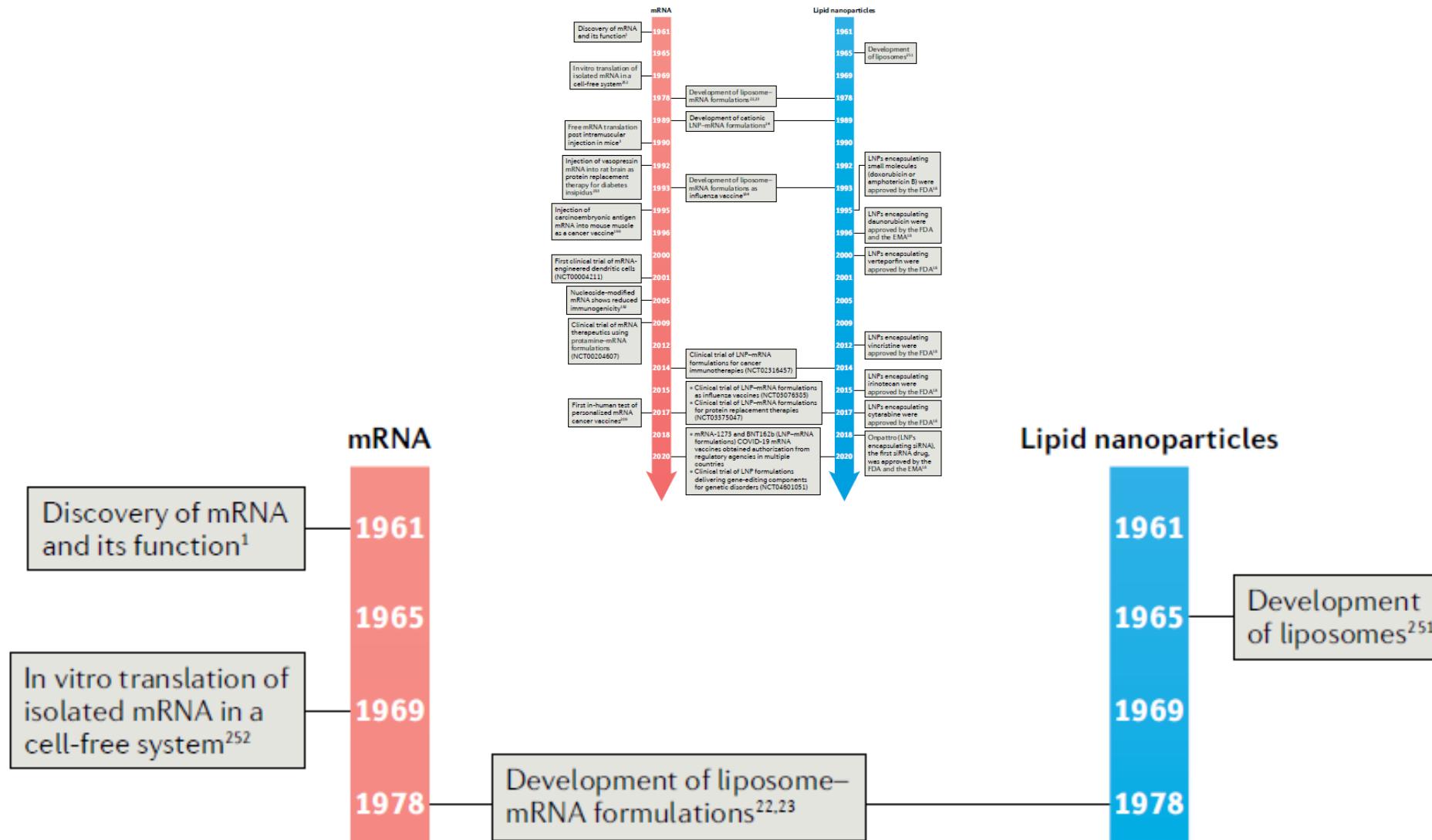
Prof. Christian Heinis

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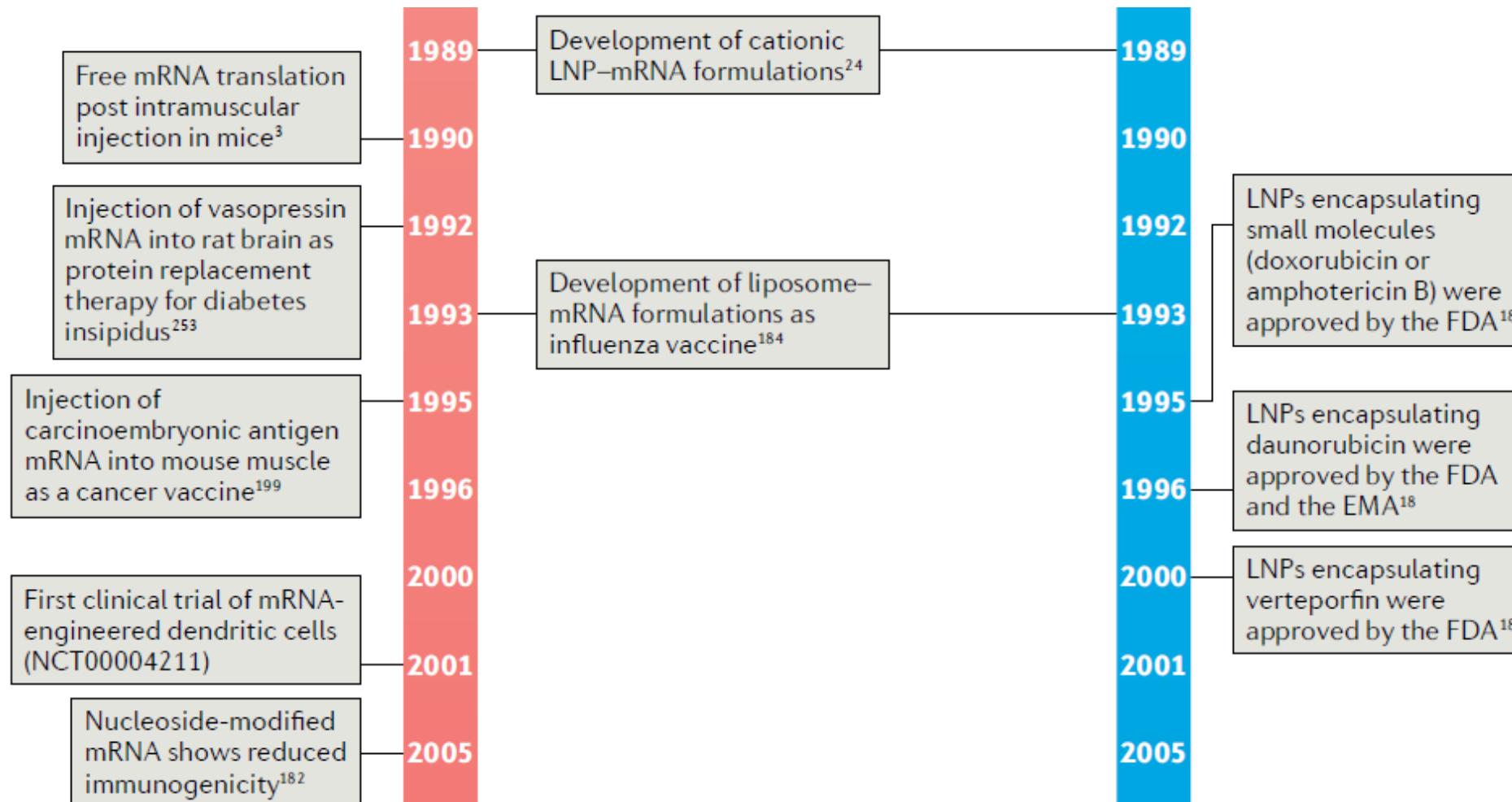
# Principle of lipid nanoparticle RNA drug delivery



# Historical perspective



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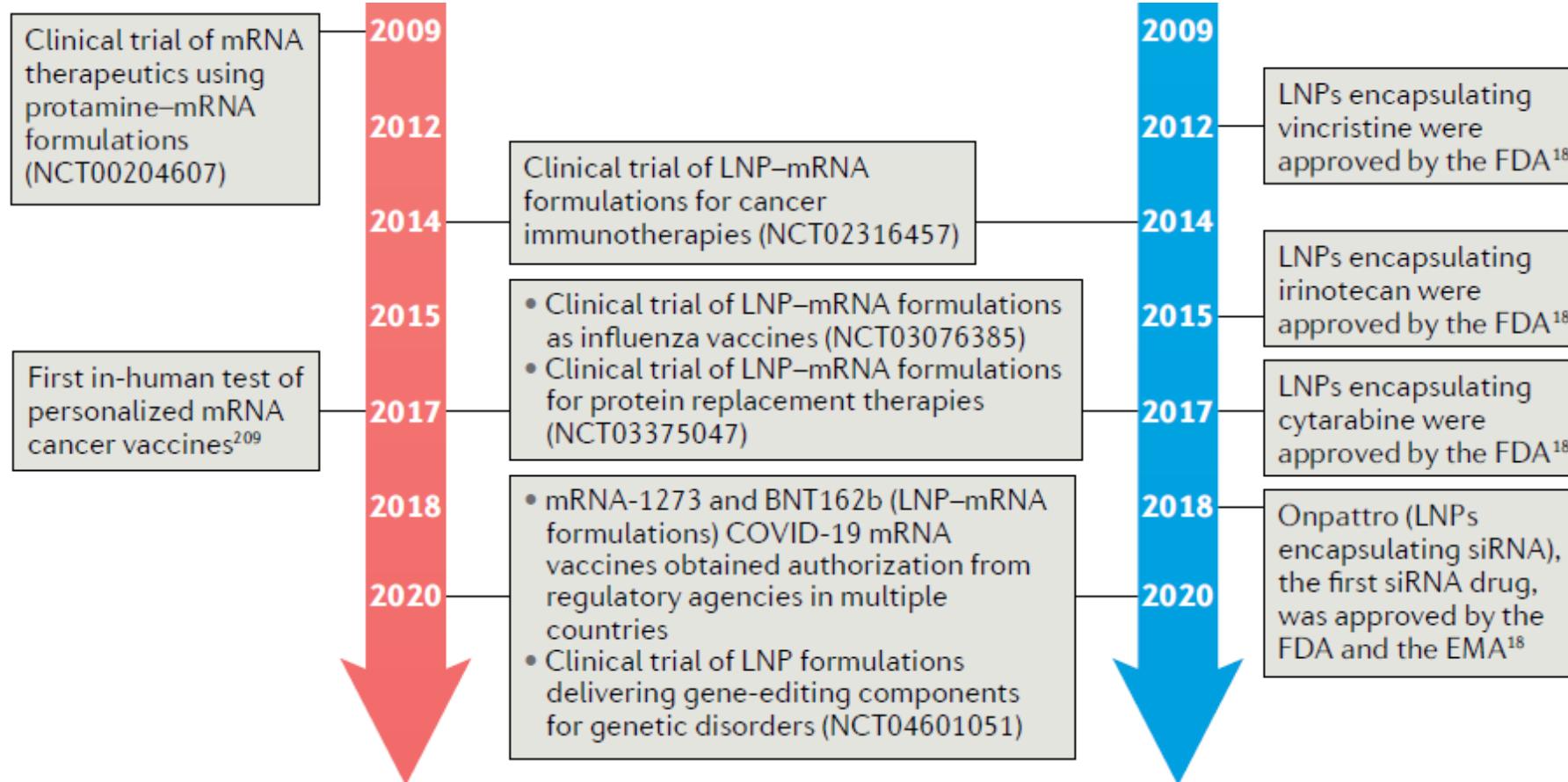


Fig. 1 | Timeline of some key milestones for mRNA and lipid nanoparticle development. COVID-19, coronavirus disease 2019; EMA, European Medicines Agency; FDA, United States Food and Drug Administration; LNP, lipid nanoparticle<sup>251-253</sup>.

# First siRNA drug: onpattro



# SARS-CoV-2 vaccine

