

Technology/ Title	Surface engineering of lipid nanoparticle in the pursuit of innovative nucleic acid-based vaccines and therapeutics	
Subtitle	Nucleic acid-lipid nanoparticle and method using the same	
Technology Type	<input checked="" type="checkbox"/> Biotechnology	<input type="checkbox"/> Device/Diagnostics
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Technology Description	Lipid nanoparticle (LNP) carrier technology successfully offers a potential tool for developing effective messenger ribonucleic acid (mRNA) vaccines against infectious diseases and small interfering RNA (siRNA) therapies against polyneuropathy. Here we investigated the rational design of the surface engineering agents and introduced an amphiphilic bioresorbable copolymer (ABC) into LNP carrier. The repurposed material conciliates between stability and biocompatibility which offers new insights into lipid nanoparticle formulations for COVID-19 vaccine development. Moreover, we demonstrated that the potential to extend the range of LNP carriers to deliver DNA/RNA molecules in cancer treatment. This platform technology represents an application-oriented R&D approach positioned to make important steps towards nucleic acid-based nanomedicine.	
Intellectual Property	Taiwan patent granted TW I853485; US and AU patent application.	
Key Publications	Molecular Therapy Nucleic Acids. 2024;35(3):102261.	
Business Opportunity	License out and/or collaboration and sponsored research	

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