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(54) Title: LIPID NANOPARTICLE FORMULATIONS AND COMPOSITIONS

(57) Abstract: Disclosed are compositions of lipid nanoparticles (LNP) comprising an ionizable cationic lipid, a phospholipid, a sterol, and a PEG-lipid (non-functionalized and optionally functionalized). The functionalized PEG-lipid can be conjugated with a binding moiety to create a targeted LNP (tLNP). The disclosed tLNP preferentially deliver a nucleic acid molecule or other negatively charged payload to cells expressing a cell surface antigen recognized by the binding moiety of the tLNP, and are better tolerated, as compared to LNPs and tLNPs comprising ionizable cationic lipids found in marketed pharmaceuticals comprising LNPs.

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