

Abstract

The present invention provides an ionizable lipid compound having an optimized carbon chain length and an amine head so that the ionizable lipid compound has increased delivery efficiency for an active molecule including, but not limited to, nucleic acids, proteins, small molecule drugs and the like. The present invention further relates to a lipid nanoparticle (LNP) comprising the ionizable lipid compound and the active molecule, and a pharmaceutical composition comprising the lipid nanoparticle.