

ABSTRACT

The present invention provides an amino lipid, and lipid nanoparticles (LNPs) and a use thereof, the amino lipid having a structure represented by general formula (I), or an isomer, pharmaceutically acceptable salt, prodrug or solvate of the amino lipid. The present invention further provides LNPs containing the amino lipid. According to the present invention, the amino lipid having a structure represented by general formula (I) is used as an ionizable lipid compound, and the LNPs are obtained by means of self-assembly of the ionizable lipid compound, a steroid, a neutral lipid, and a polymer-bonded lipid. The LNPs can further improve the translation expression level of a nucleic acid load in cells, improve the effect of a nucleic acid-LNP preparation, and enable the nucleic acid-LNP preparation to provide a theoretical basis for personalized treatment.

(No Suitable Figure)