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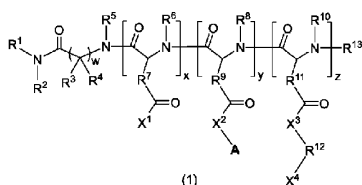
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(54) Title: A COMPOUND FOR PREPARING LIPID NANOPARTICLES ENCAPSULATING AN AGENT, NANOPARTICLE COMPOSITION COMPRISING SAID COMPOUND AND RELATED METHODS THEREOF



(57) Abstract: There is provided a compound represented by general formula (1) for preparing lipid nanoparticles encapsulating a therapeutic, prophylactic and/or biological agent: wherein A comprises a hydrophilic moiety selected from carbohydrate/sugar/saccharide and derivatives thereof; X^1 is $-OR^a$ or $-NR^bR^c$; X^4 is $-OR^y$, $-SR^z$ or a hydrophilic group, where R^y to R^z are independently selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; X^2 and X^3 are each independently $-O-$ or $-NR^d-$, where R^a to R^d are independently selected from the group consisting of H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; R^1 and R^2 are each independently a hydrophobic group; R^3 , R^4 , R^5 , R^6 , R^8 and R^{10} are each independently H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; R^7 , R^9 , R^{11} and R^{12} are each independently optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl; R^{13} is H, optionally substituted alkyl, optionally substituted alkenyl or optionally substituted alkynyl, or $-C(=O)R^{14}$, where R^{14} is optionally substituted alkyl, optionally substituted alkenyl, optionally substituted alkynyl; $w \geq 1$; x is 0 or ≥ 1 ; y is 0 or ≥ 1 ; and z is 0 or ≥ 1 .



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