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(54) Title: PIPERAZINE-BASED CATIONIC LIPIDS

(57) Abstract: The present invention provides, in part, piperazine-based lipid compounds of Formula (I), and sub-formulas thereof: or a pharmaceutically acceptable salt thereof. The compounds provided herein can be useful for delivery and expression of mRNA and encoded protein, e.g., as a component of liposomal delivery vehicle, and accordingly can be useful for treating various diseases, disorders and conditions, such as those associated with deficiency of one or more proteins.

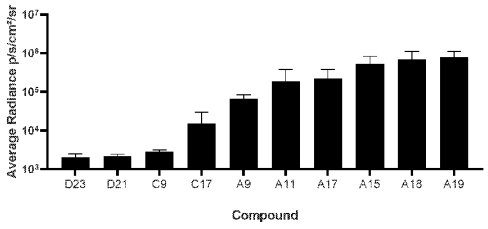
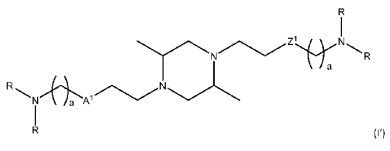


FIG. 1



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