molecular pharmaceutics

Additions and Corrections

Aliphatic Lipid Substitution on 2 kDa Polyethylenimine Improves Plasmid Delivery and Transgene Expression

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(**2009**, *6* (6), 1798–1815).

During a recent inspection of the original manuscript, we realized that the synthesis procedure described in the paper was not correct; we inadvertently included a synthesis scheme for a related polymer and not the polymer prepared for this study. The correct procedure is described below.

Synthesis and Characterization of Lipid-Substituted Polymers

The lipid-substituted polymers were synthesized by N-acylation of 2 kDa PEI with commercially available lipid chlorides (Scheme 1). The PEI was obtained as a 50% solution and purified by freeze-drying before use. The synthesis procedure was adopted from a previously described procedure.[6] Briefly, 100 mg of PEI was dissolved in 5 mL of anhydrous dichloromethane (DCM, ≥99.8%; SIGMA) under N_2 at room temperature. After addition of 4 μL of triethylamine (99%; SIGMA), the desired fatty acid was dissolved in 5 mL of DCM and gradually added to the PEI solution over a 30 min period. The lipid:PEI amine ratios were systematically varied during the synthesis procedure between 0.012 and 0.2, assuming one primary amine per PEI monomer unit as shown in Scheme 1 (a total of 14 primary amines in PEI). The solution was stirred for 12 h under N_2. The reaction was quenched in an ice bath. The solvent was removed by rotary evaporation, and the final product was washed with excess ethyl ether (×3). The polymers were dried under vacuum at ambient temperature overnight. The modified polymers were analyzed by ^{1}H NMR (Bruker 300 MHz; Billerica, MA) in D_2O. The characteristic proton shift of the lipids (δ ~0.8 ppm; $-CH_3$) and PEI (δ ~2.5−2.8 ppm; $-NH-CH_2-CH_2-NH-$) were integrated, normalized for the number of H's in each peak, and used to obtain the extent of lipid substitutions on the modified polymers (Table 1). Where indicated, the number of lipid carbons (C) or methylenes substituted was also calculated by multiplying the number of lipids/PEI with the number of C's in each lipid.

Note that Scheme 1 used to describe the reaction scheme was correct in the published manuscript.

We apologize to research community for this oversight.

10.1021/mp1000263
Published on Web 02/18/2010

MP1000263