Supplementary Information

Chitosan modified by γ-ray-induced grafting of poly(tributyl-(4-vinylbenzyl) phosphonium) as the biosafe and high-efficiency gene carrier

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The ^{13}C-NMR spectra of 4-vinylbenzyl chloride and tributylphosphine

The ^{13}C-NMR spectra were performed on a Bruker AVANCE III 300 at a frequency of 100.6 MHz using $CDCl_3$ as the solvent.

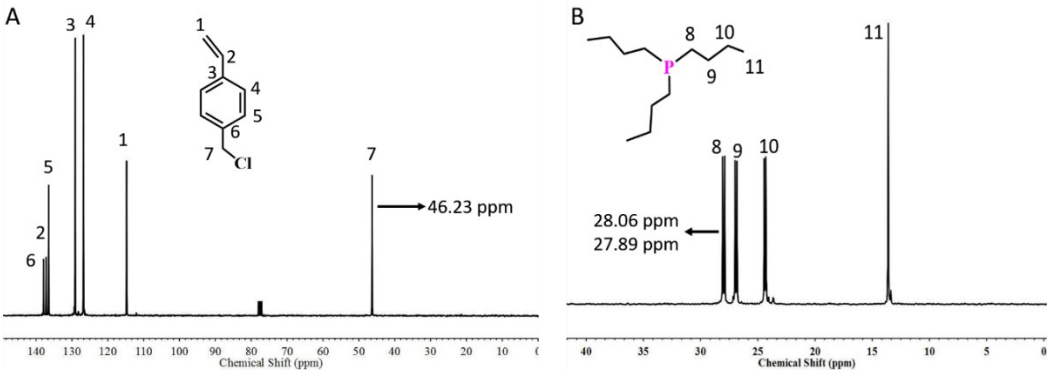

Figure S1. The ^{13}C-NMR spectra of 4-vinylbenzyl chloride (A) and tributylphosphine (B).

The chemical shifts for 4-vinylbenzyl chloride: Peak 1 (115.13 ppm, -***C***H_2=), Peak 2 (137.14 ppm, Ar-***C***H=), Peak 3-6 (129.16, 126.88, 136.66, and 137.89 ppm, -***C***H_2- in benzene ring), Peak 7 (46.23 ppm, Ar-***C***H_2-Cl).

The chemical shifts for tributylphosphine: Peak 8 (27.89 and 28.06 ppm, -***C***H_2- in aliphatic chains), Peak 9 (26.99 and 26.81 ppm, -***C***H_2- in aliphatic chains), Peak 10 (24.43 and 24.29 ppm, -***C***H_2- in aliphatic chains), and Peak 11 (13.60 ppm, -***C***H_3).