Electronic Supplementary Material (ESI) for Journal of Materials Chemistry B.

Supplementary data

Diol glycidyl ether-bridged low molecular weight PEI as potential gene delivery vehicles

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Table S1 The IC50 values of polyplexes calculated by a Cell Counting Kit-8.

polyplexes	HEK293 cells	Hela cells
	IC50 value (μg/μL)	IC50 value(μg/μL)
P1	1.80×10^{-2}	2.40×10^{-2}
P2	1.16×10^{-2}	1.20×10^{-2}
P3	1.10×10^{-2}	1.50×10^{-2}
P4	1.30×10^{-2}	1.16×10^{-2}
P5	1.18×10^{-2}	1.44×10^{-2}
PEI	0.60×10^{-2}	0.60×10^{-2}

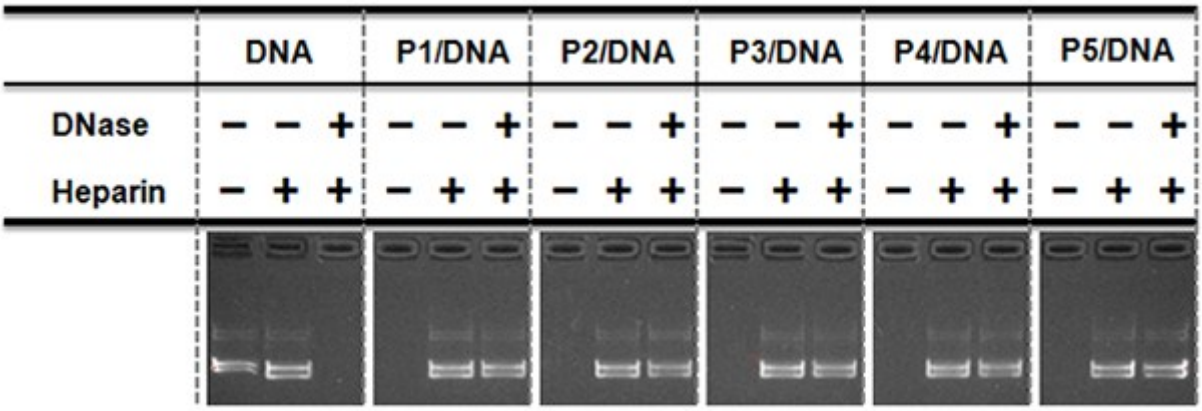


Fig. S1 Agarose gel electrophoresis of **P1~P5**/DNA polyplexes at mass ratio of 3.2 incubated with heparin and/or DNase (−: without addition, +: with addition).

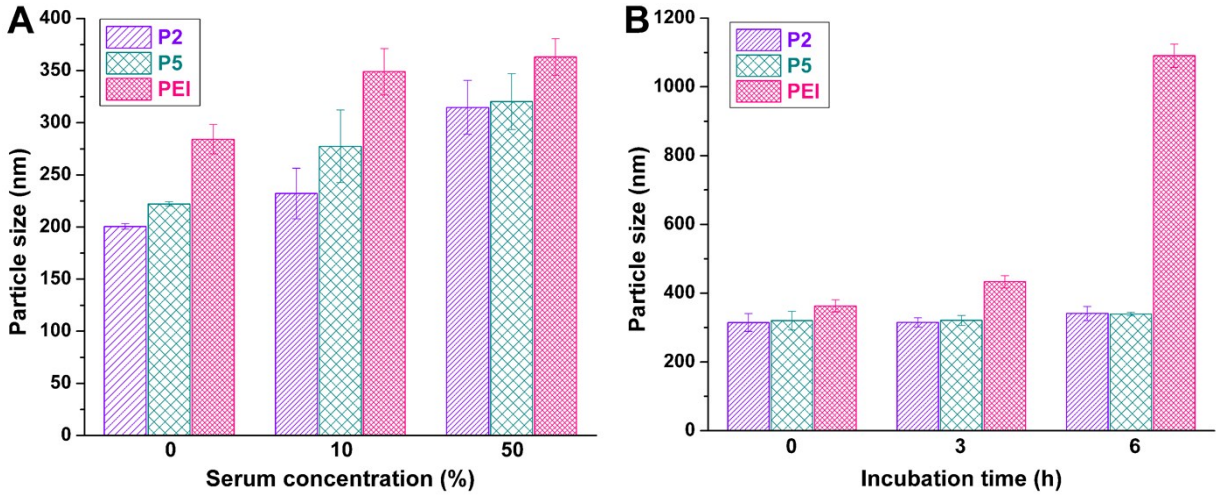
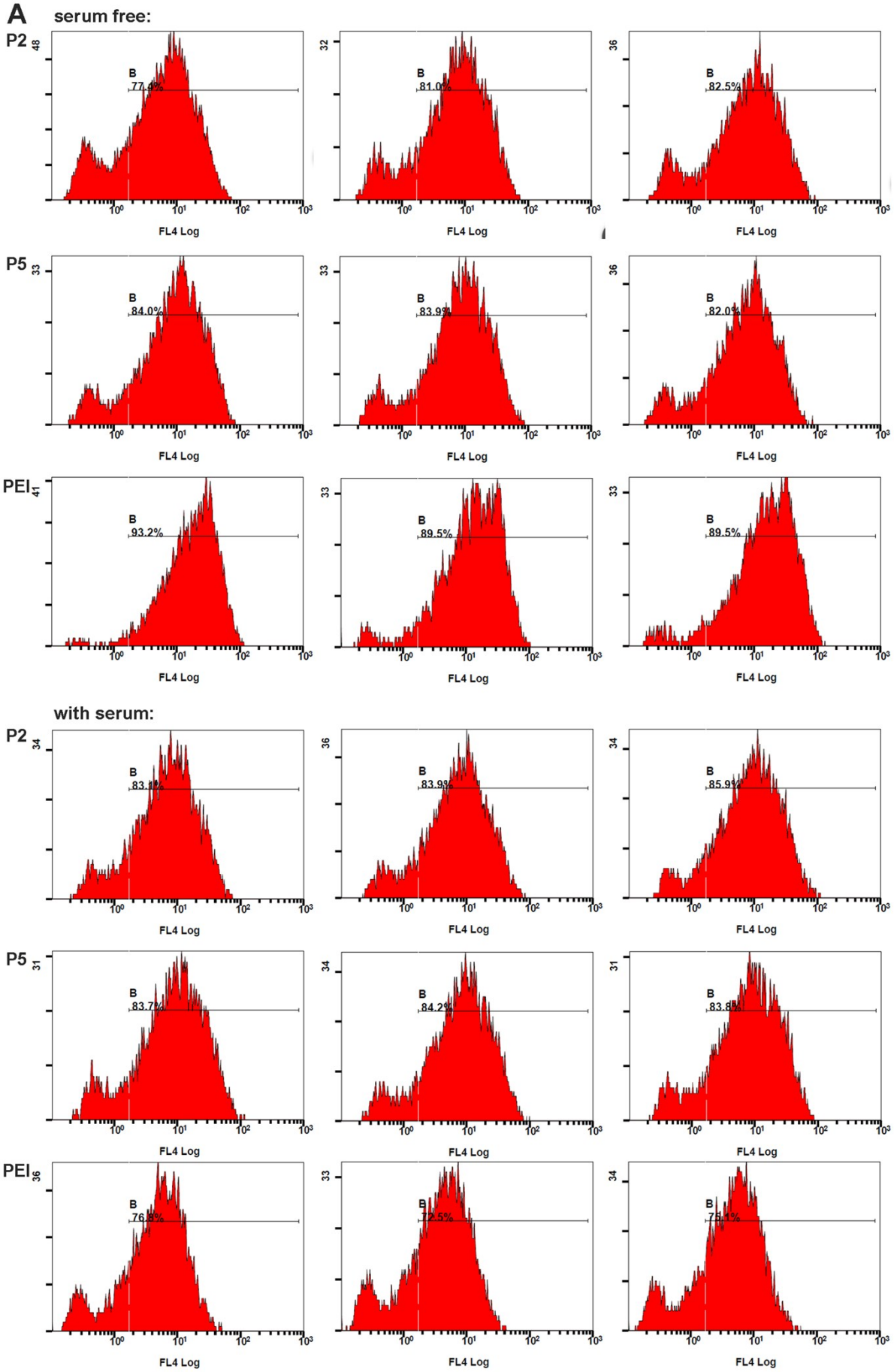


Fig. S2 (A) Sizes of polyplexes under different FBS concentrations. (B) Sizes of polyplexes in 50% FBS solution at different time intervals. Polyplexes derived from **P2**, **P5** for w/w=6.4 and PEI for w/w=1.4. Data represent mean ± SD (n = 3).


A
serum free:
P2
B
77.4%
B
81.0%
B
82.5%
P5
B
84.0%
B
83.9%
B
82.0%
PEI
B
93.2%
B
89.5%
B
89.5%
with serum:
P2
B
83.1%
B
83.9%
B
85.9%
P5
B
83.7%
B
84.2%
B
83.8%
PEI
B
76.9%
B
72.5%
B
78.1%
FL4 Log

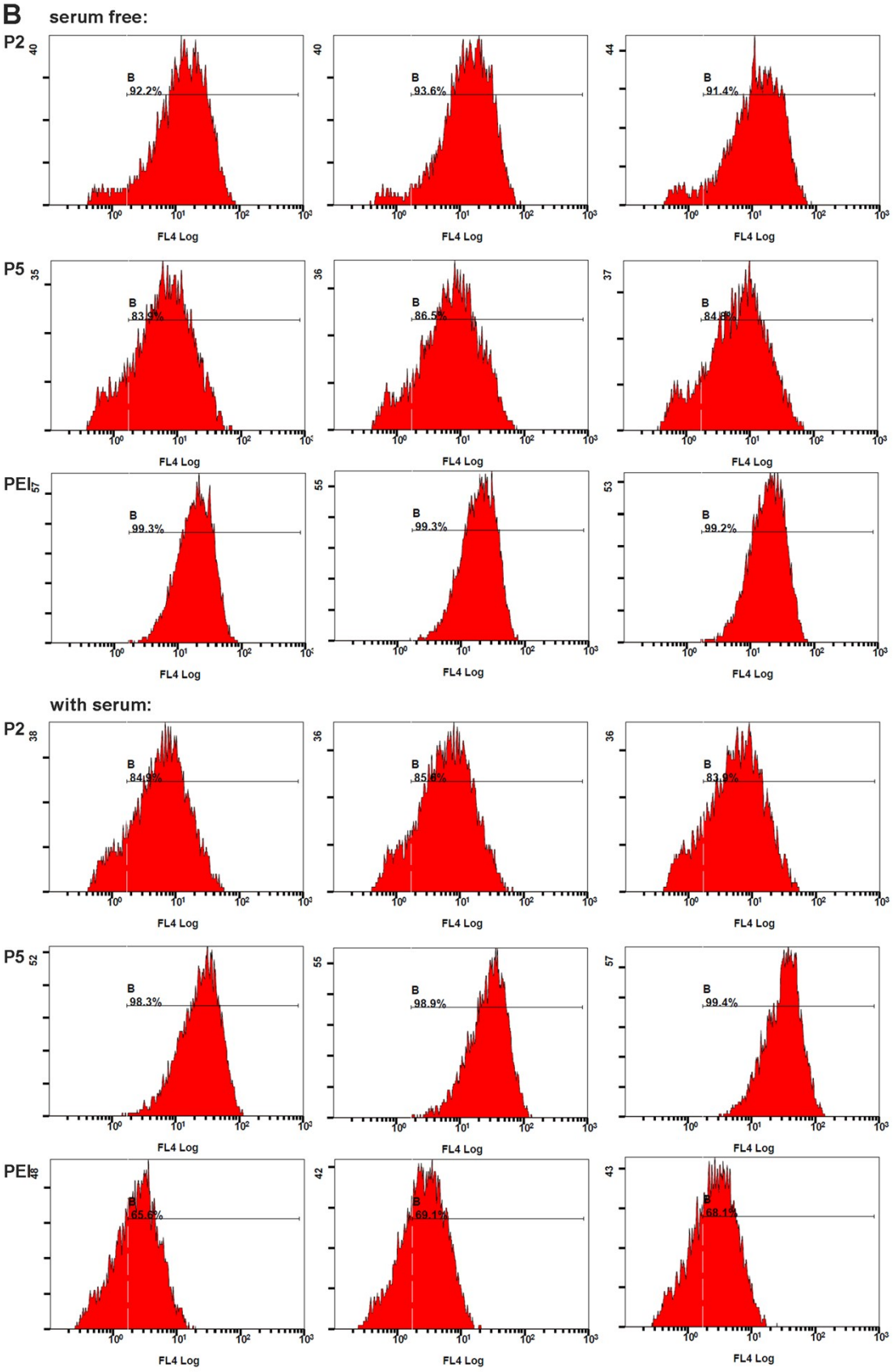
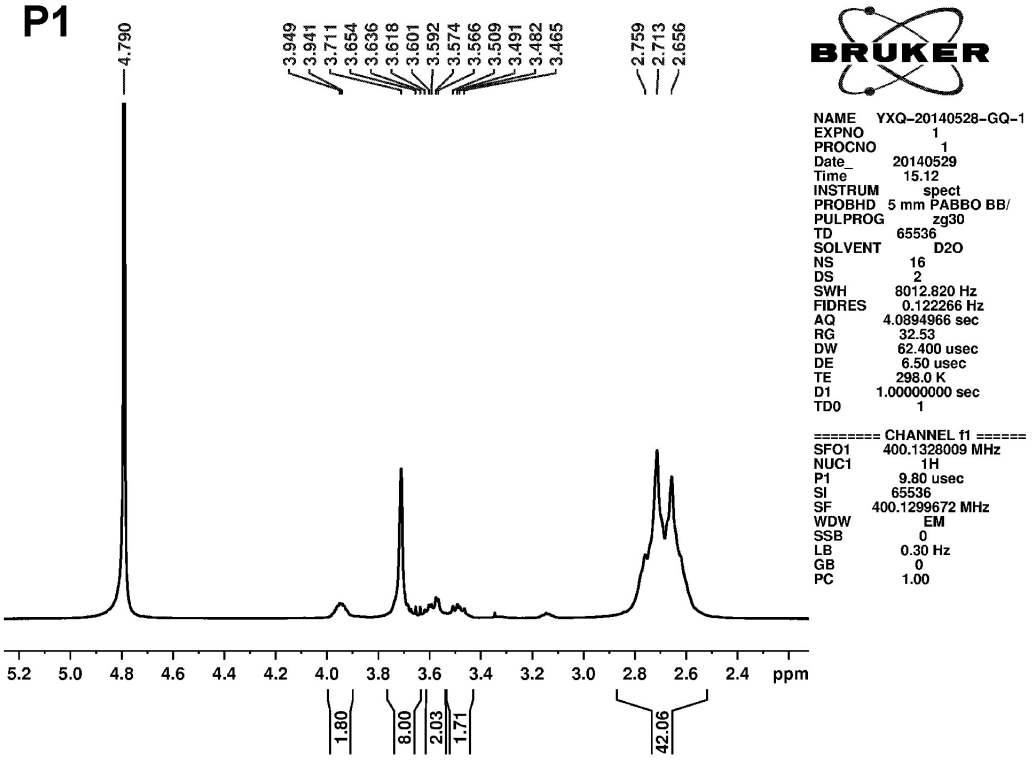
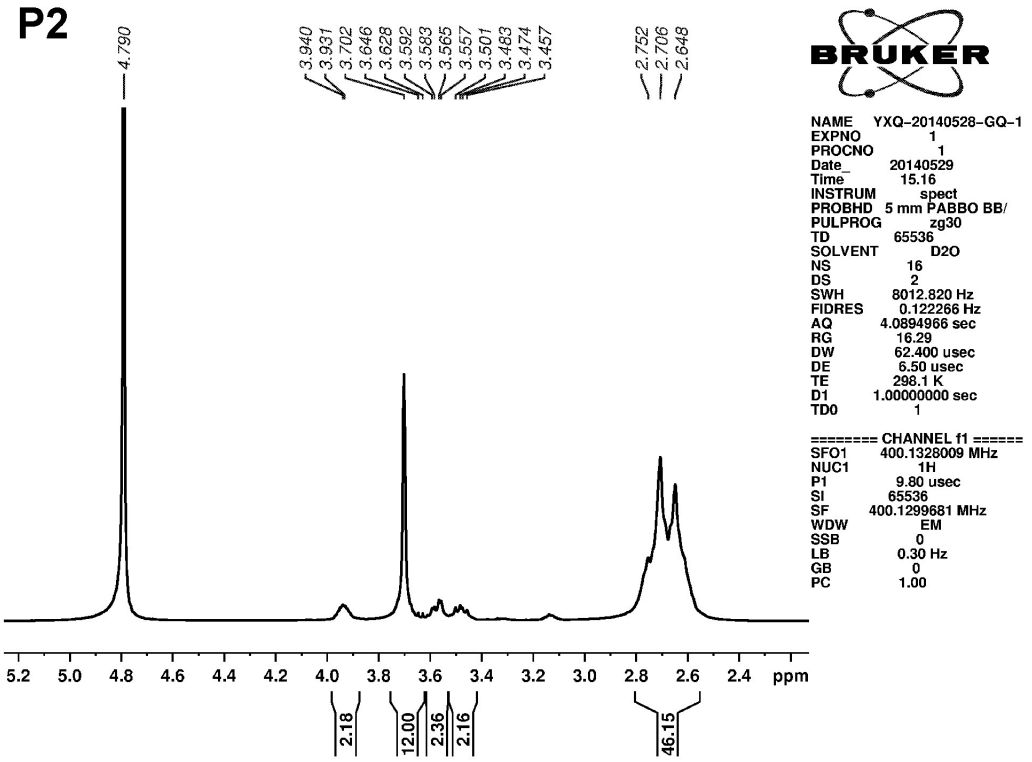


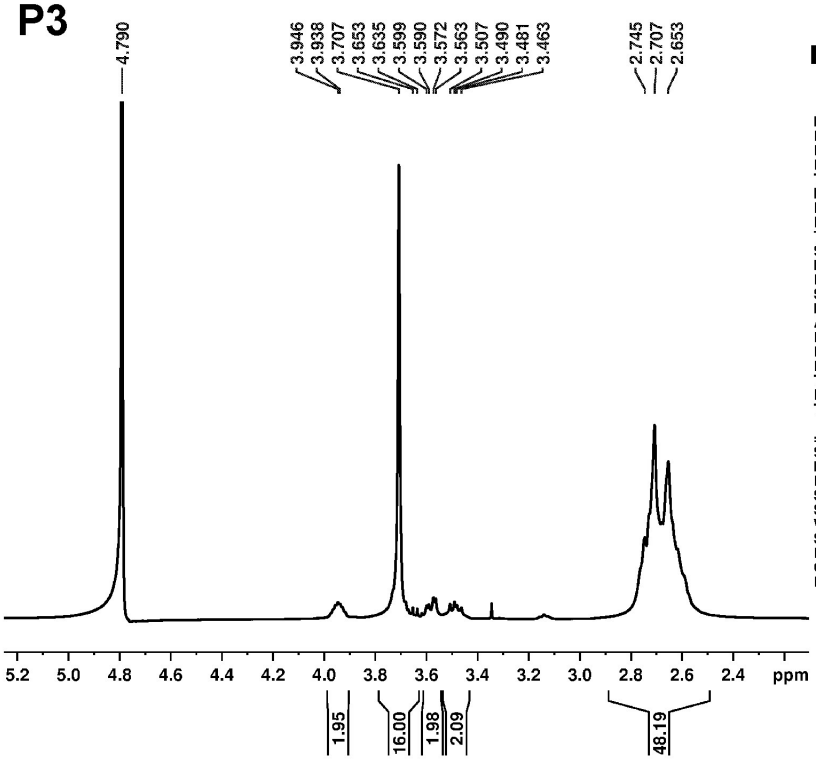
Fig. S3 The detailed cellular uptake data of flow cytometry analysis by using Cy5-labelled polyplexes. A: polyplexes at optimal mass ratios in HEK 293 cells; B: polyplexes at optimal mass ratios in Hela cells.

^{1}H NMR spectra of the polymers P1~P5:





P3



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DS 2
SWH 8012.820 Hz
FIDRES 0.122266 Hz
AQ 4.0894966 sec
RG 32.53
DW 62.400 usec
DE 6.50 usec
TE 298.1 K
D1 1.00000000 sec
TD0 1

======== CHANNEL f1 ======
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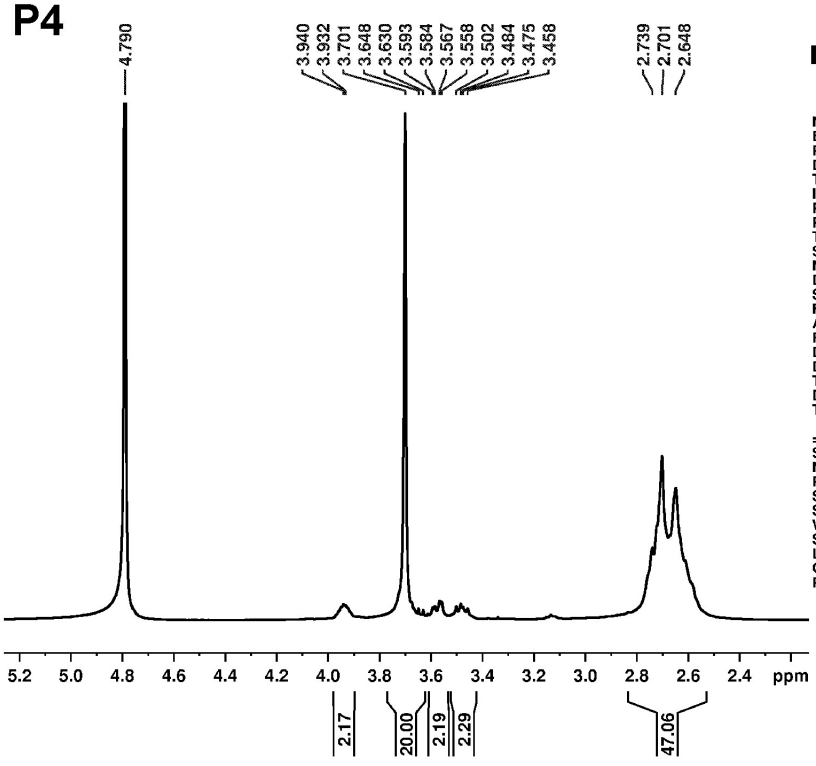
NUC1 1H
P1 9.80 usec
SI 65536
SF 400.1299673 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00

P4



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D1 1.00000000 sec
TD0 1

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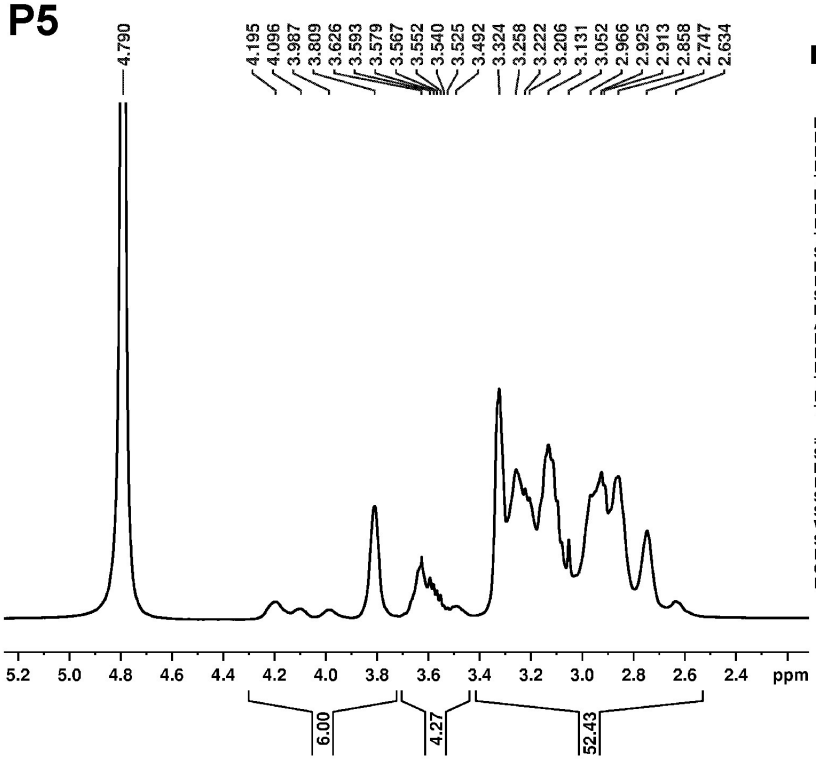
PC 1.00

P5



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FIDRES 0.122266 Hz
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RG 19.64
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DE 6.50 usec
TE 295.7 K
D1 1.00000000 sec
TD0 1

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NUC1 1H
P1 9.75 usec
SI 65536
SF 400.1299646 MHz
WDW EM
SSB 0
LB 0.30 Hz
GB 0
PC 1.00