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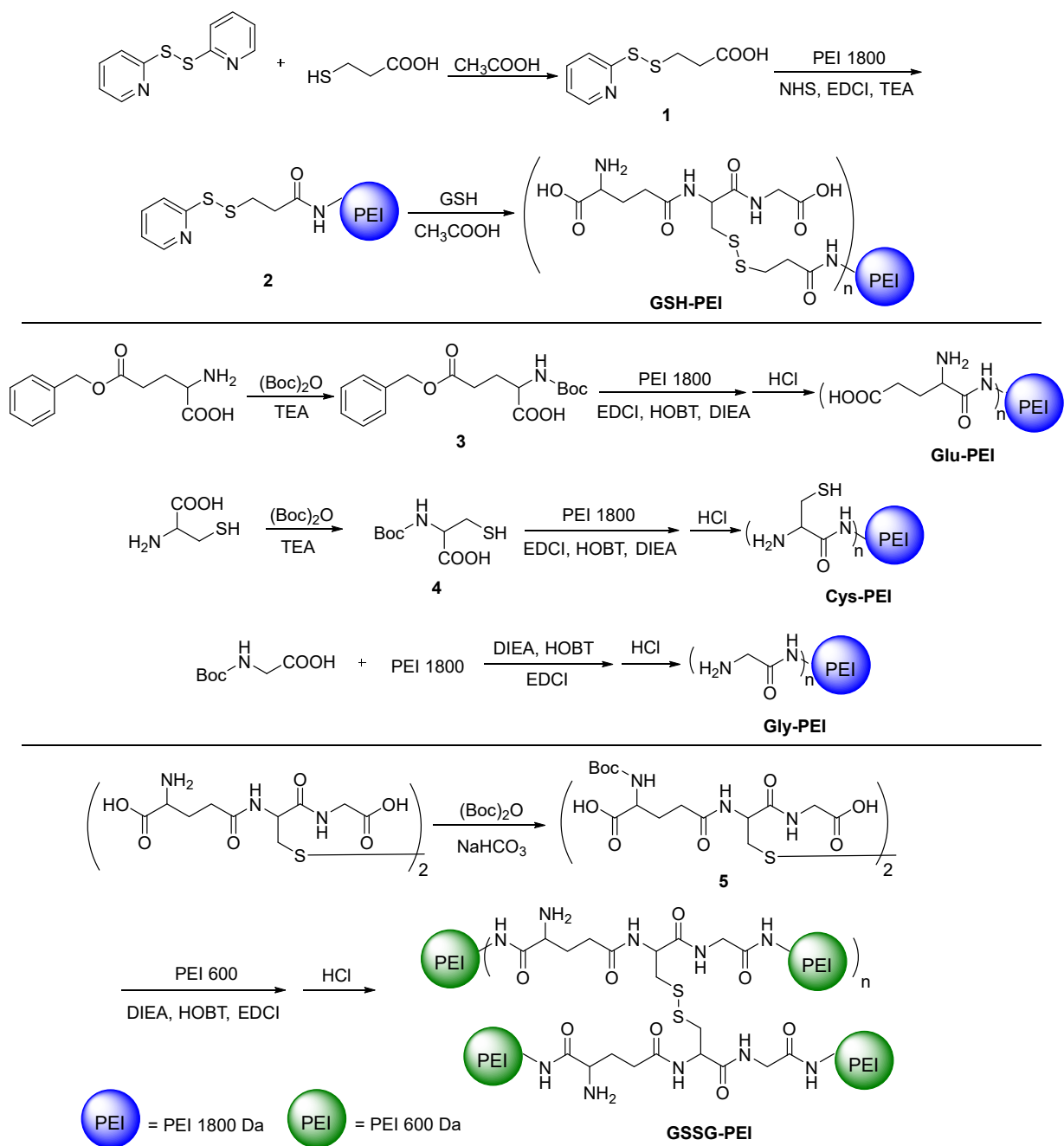
Electronic Supplementary Information

**Glutathione modified low molecular weight PEI for highly
improved gene transfection ability and biocompatibility**

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Scheme S1. Detailed preparation route of the polymers.

Table S1. Calculated SD of polymers modified with amino acid / GSH according to ¹H NMR spectra.

Pendant	Feed ratios (%)	Calculated SD (%)
GSH	10	6.7
	20	8.7*
	30	12.5
Glu	10	8.1*
	20	10.3
	30	10.8
	50	9.7
Cys	10	4.2
	20	5.7
	30	6.8
	50	9.4*
Gly	10	3.8
	20	12.2*
	30	13.4
	50	19.2

* The polymers used in this study.

Table S2. M_w and PDI of polymers measured by GPC.

Polymers	Gly-PEI	Cys-PEI	Glu-PEI	GSH-PEI	GSSG-PEI
M _w	5600	5300	4300	7100	7400
PDI	1.15	1.10	1.10	1.23	1.71

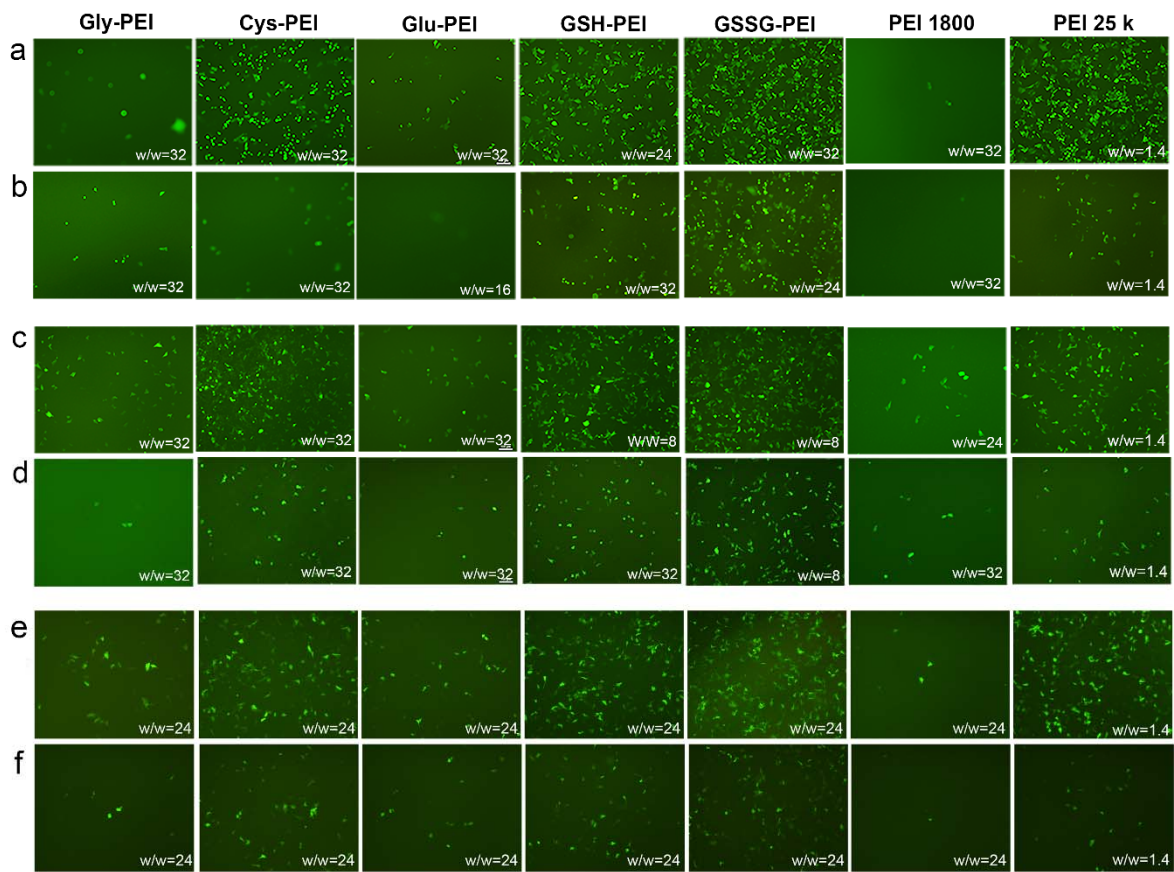


Figure S1. EGFP gene expression in HeLa (a & b), 7702 (c & d) and HEK293 (e & f) cells. a/c/e: Without serum; b/d/f: With serum.

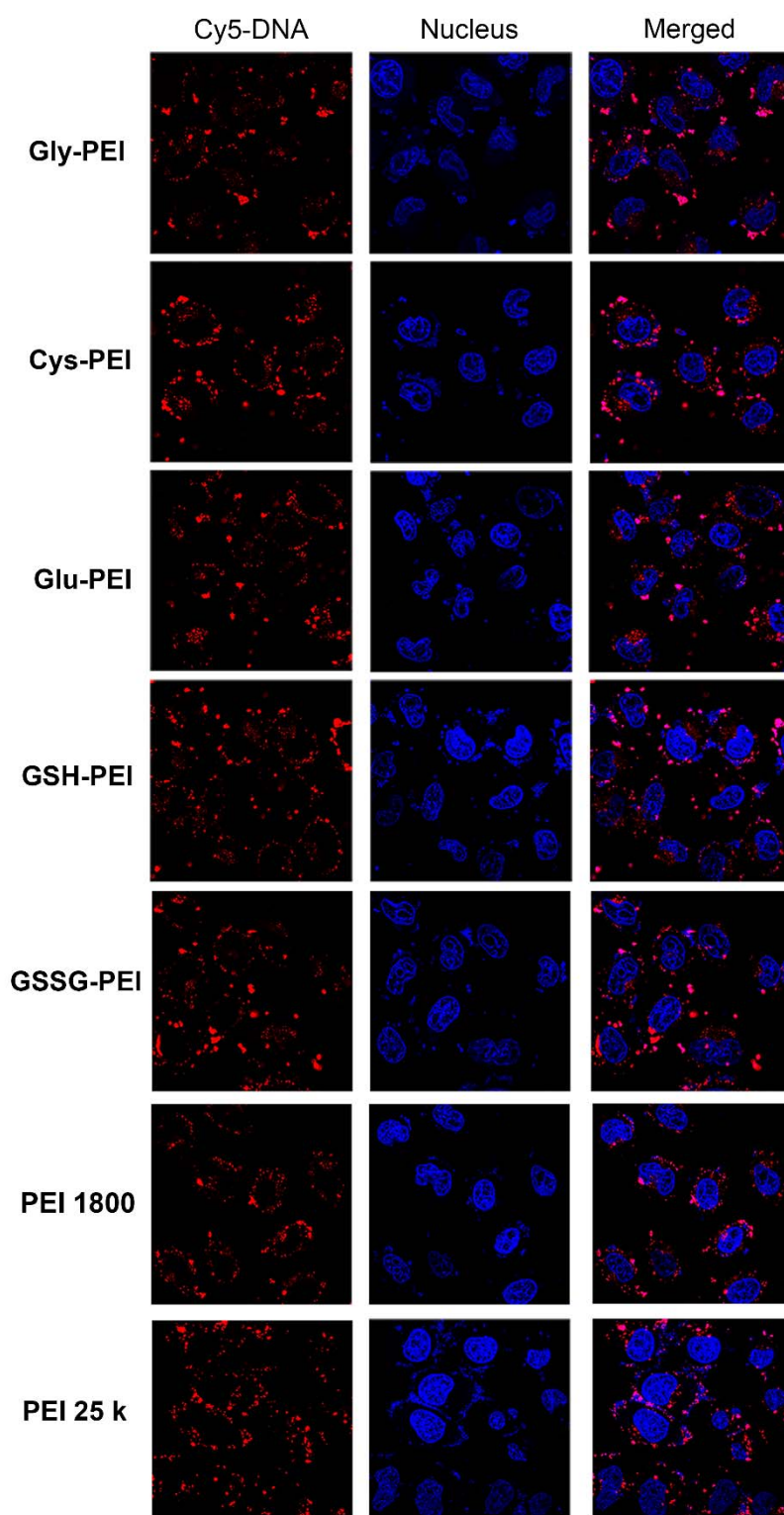
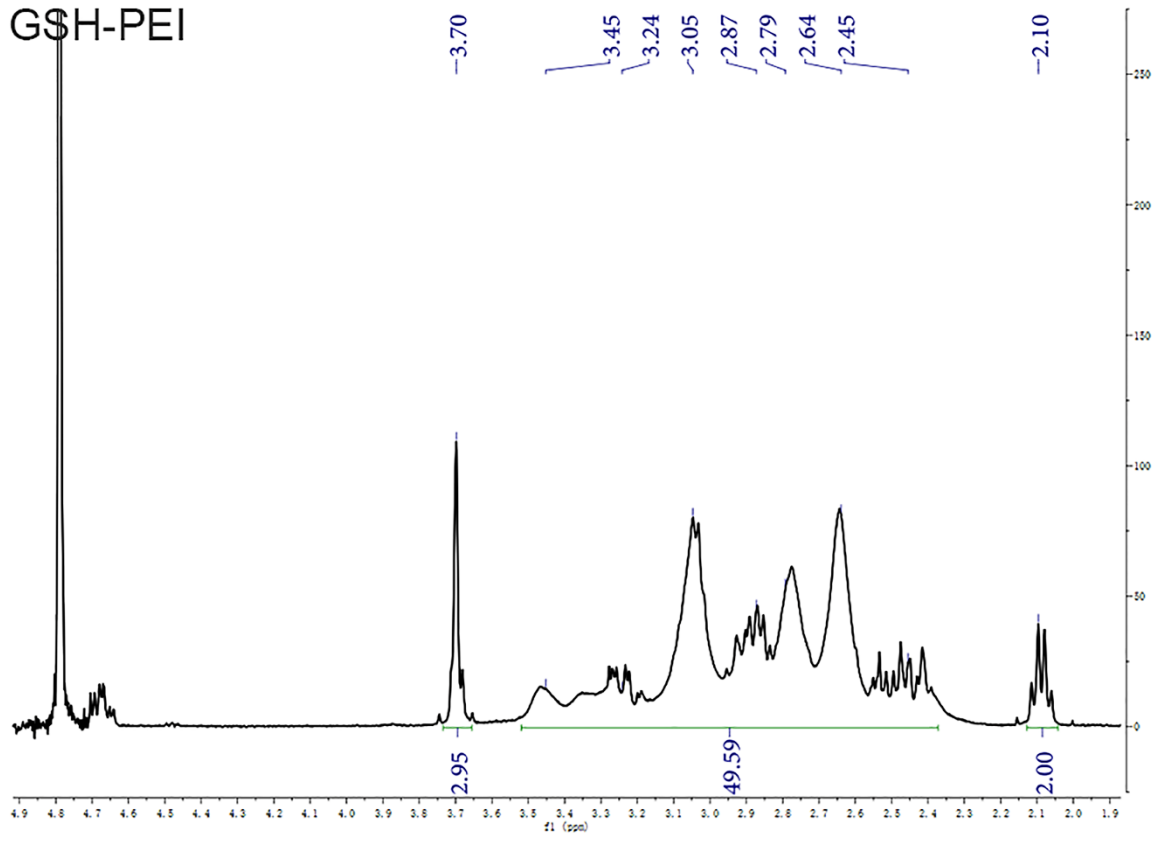
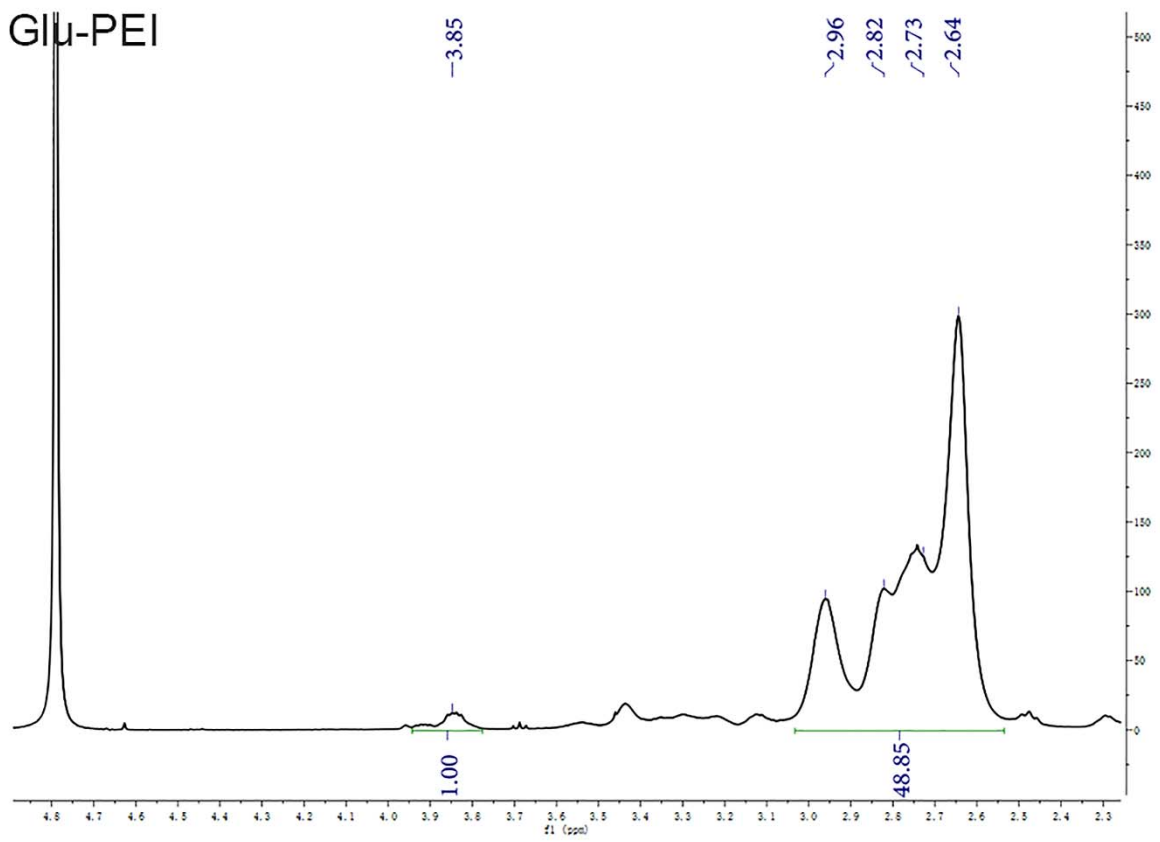


Figure S2. CLSM images in HeLa cells with serum after 4 h of transfection. w/w (polymer / DNA) = 1.4 for PEI 25 kDa and 24 for other materials. Cy5-labeled DNA (red) and Hoechst 33342 stained nucleus (blue).

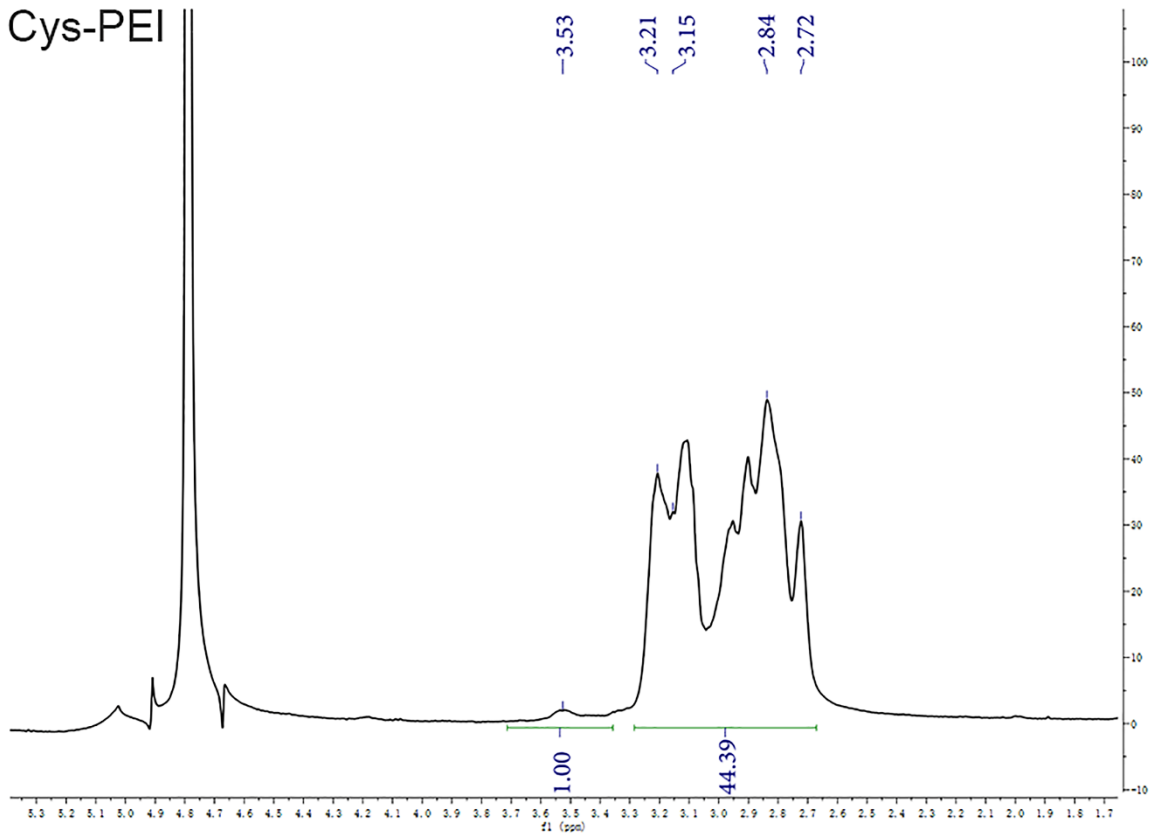
GSH-PEI



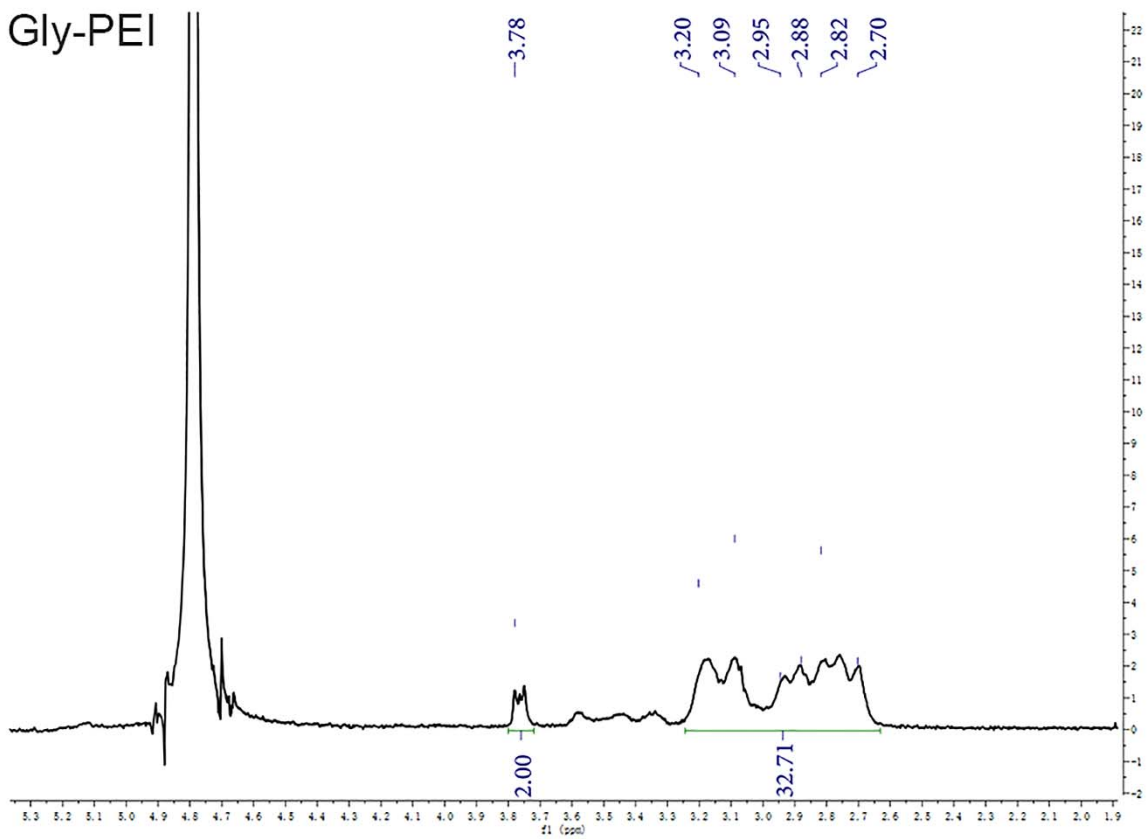
Glu-PEI



Cys-PEI



Gly-PEI



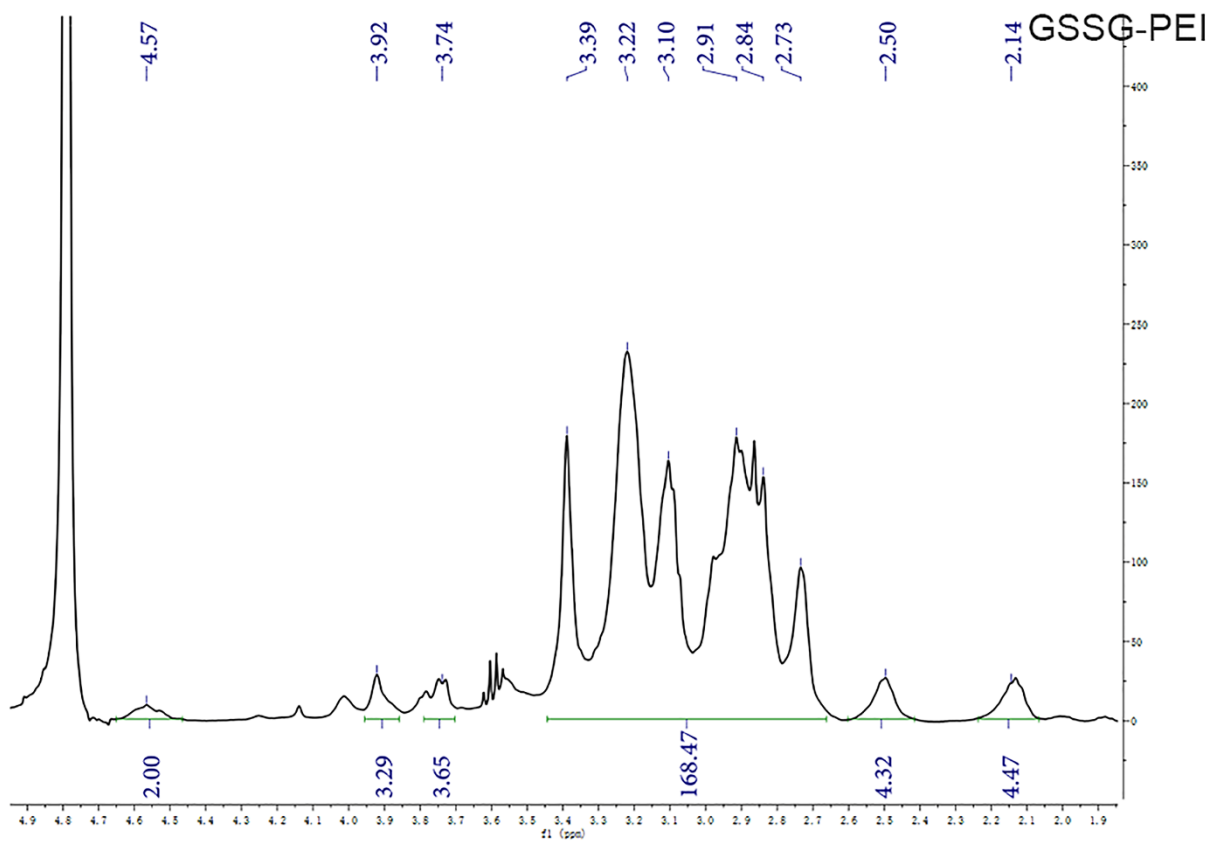


Figure S3. ^1H NMR spectra (400 MHz, D_2O) of polymers.