

Electronic Supporting Information for

Chemoenzymatic synthesis of cholesterol-g-poly(amine-co-ester)
carrier for p53 gene delivery to inhibit the proliferation and migration
of tumor cells

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Chol-g-PMSC-PPDL/p53 (wt/wt)

0 20 30 40 50 60

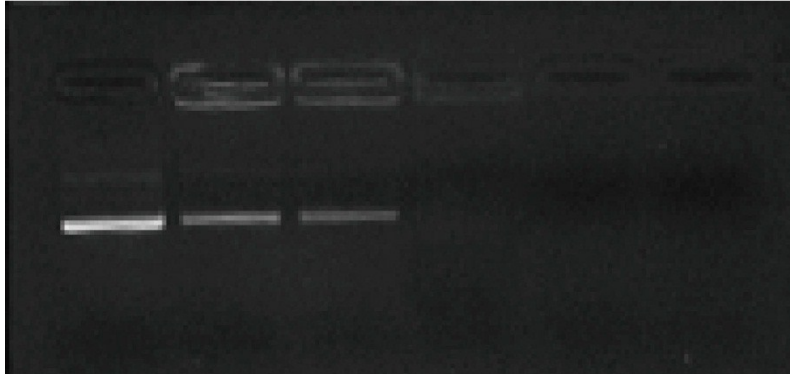


Figure S1. Gel retardation assay for detecting the binding and condensation ability of Chol-g-PMSC-PPDL with plasmid p3XFLAG-CMV-p53.

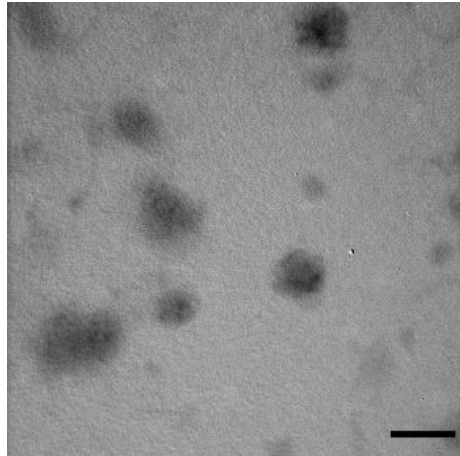


Figure S2. TEM images of Chol-g-PMSC-PPDL/p53 nanoparticle at an N/P ratio of 40.

The scale bar is 200 nm.

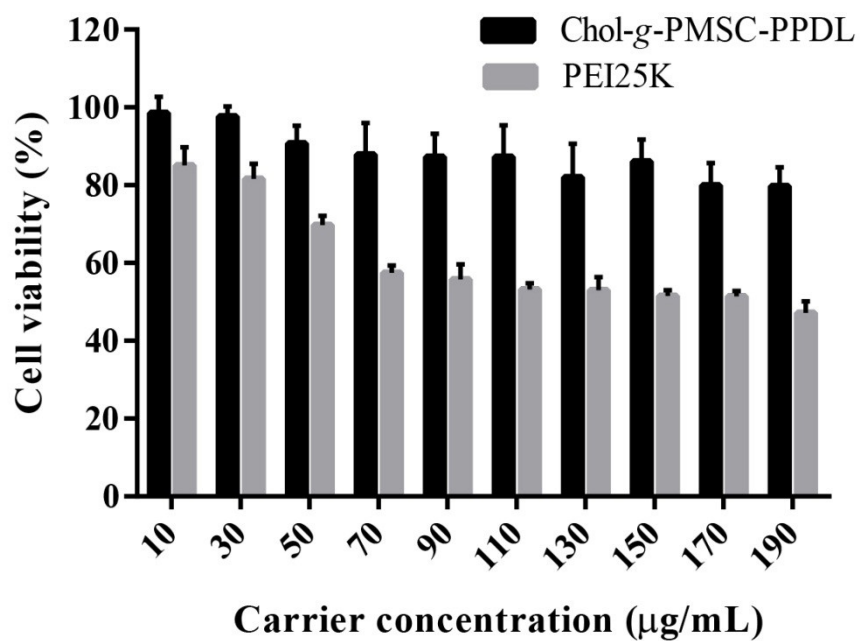
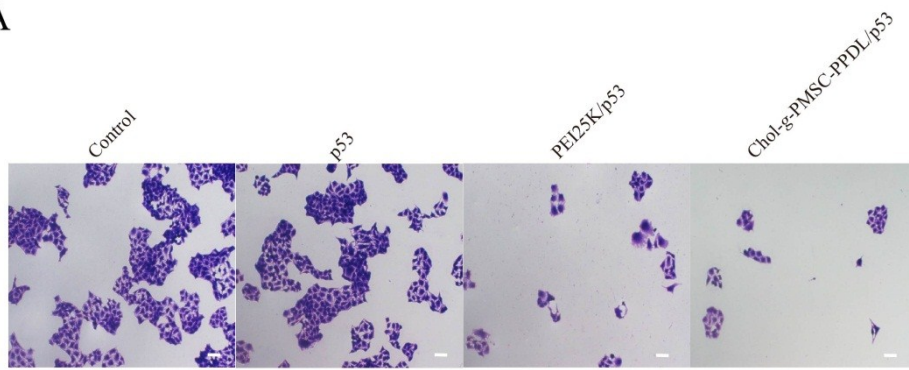


Figure S3. *In vitro* cytotoxicity evaluation of carrier Chol-g-PMSC-PPDL at different concentrations using HeLa cell as a model. Data are presented as mean value \pm SD of triplicate experiments.

A



B

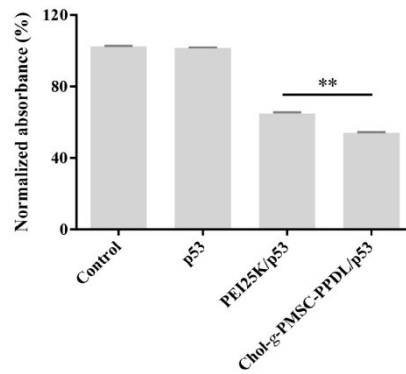


Figure S4. The inhibition of colony formation after p53 transfection (A) and the quantitative analysis through the measurement of absorbance at 578 nm of eluent (B). The scale bar is 50 μm , and data are presented as mean value \pm SD of triplicate experiments.

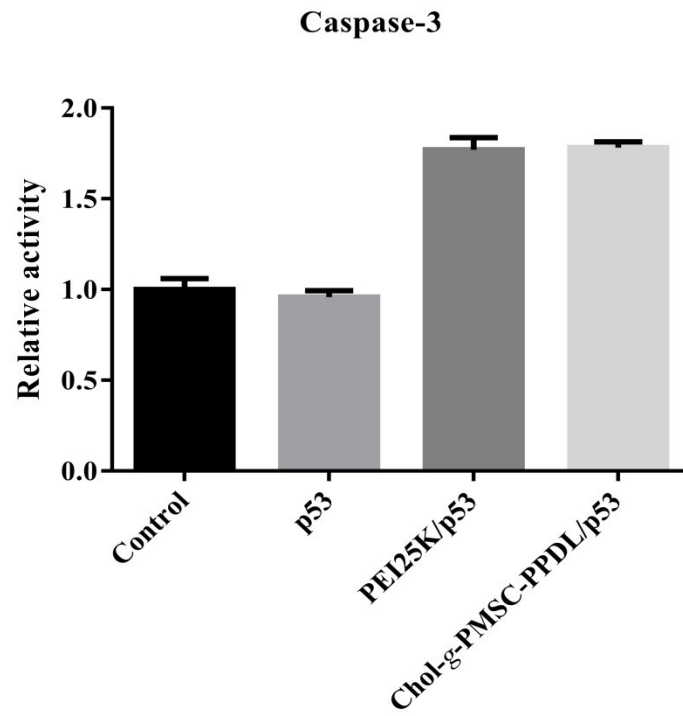


Figure S5. The caspase-3 activity measurement after p53 transfection by the activity detection kit. Data are presented as the mean value \pm SD of triplicate experiments.

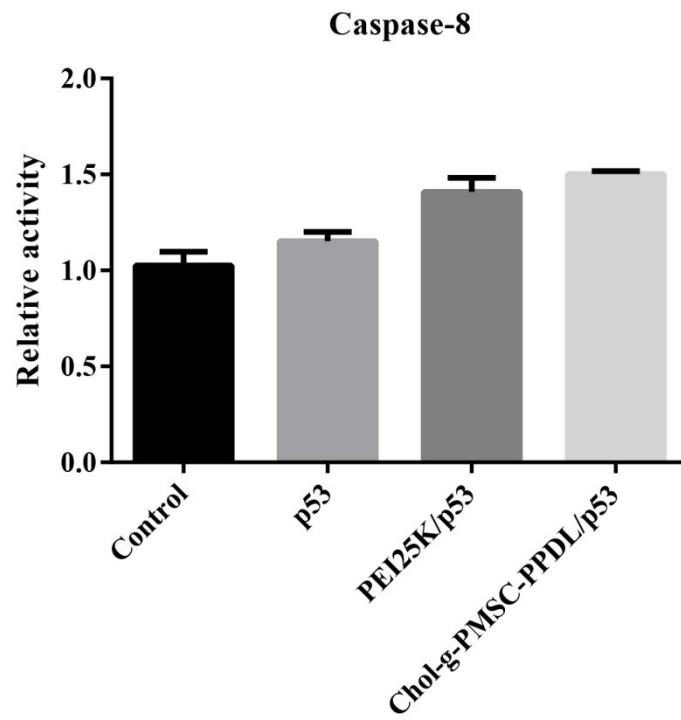


Figure S6. The caspase-8 activity measurement after p53 transfection by the activity detection kit. Data are presented as the mean value \pm SD of triplicate experiments.

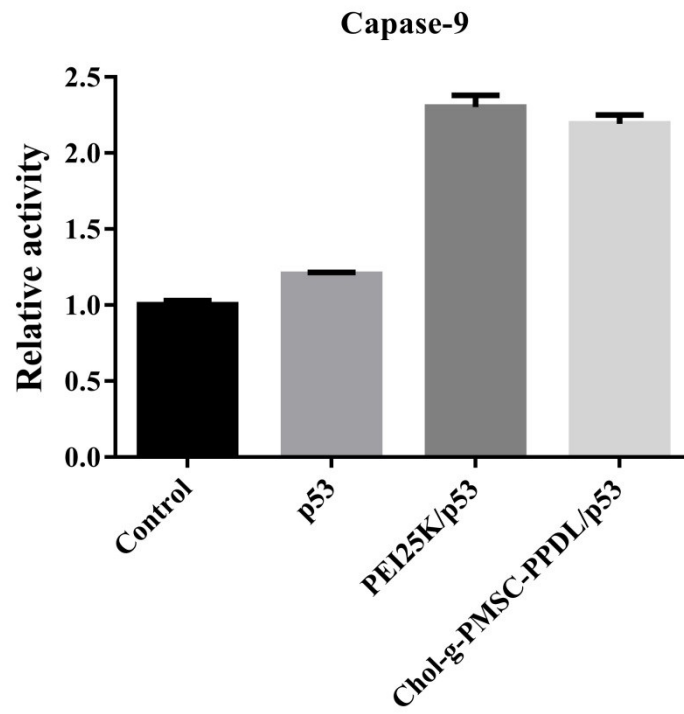


Figure S7. The caspase-9 activity measurement after p53 transfection by the activity detection kit. Data are presented as the mean value \pm SD of triplicate experiments.

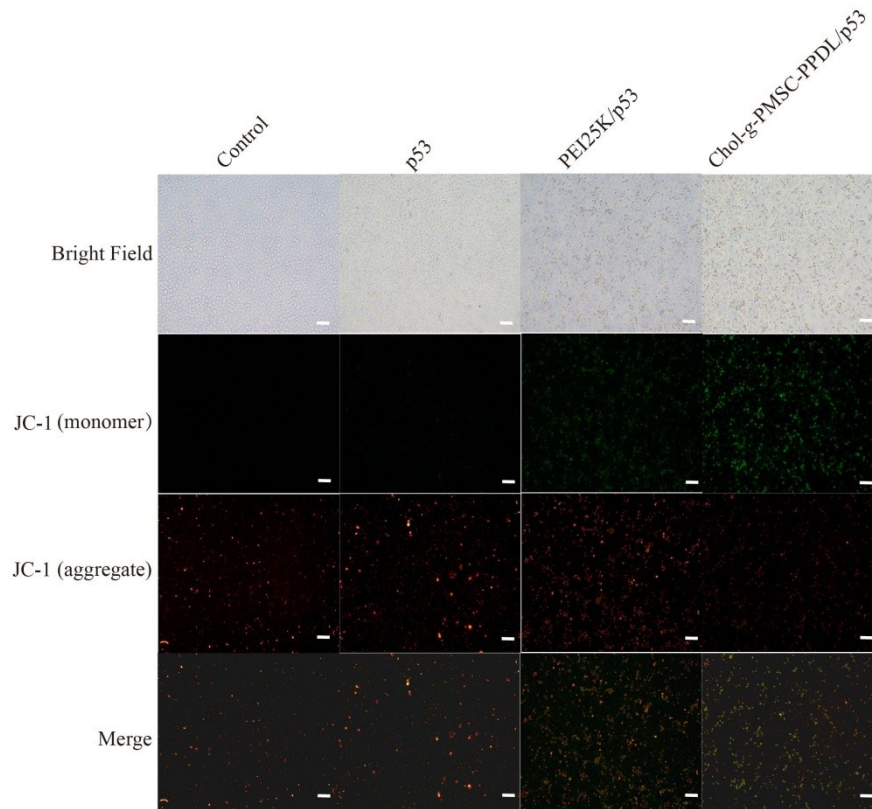


Figure S8. Mitochondrial membrane potential analysis of HeLa cells after the carriers-mediated p53 transfection using JC-1 probe. The scale bar is 100 μm .

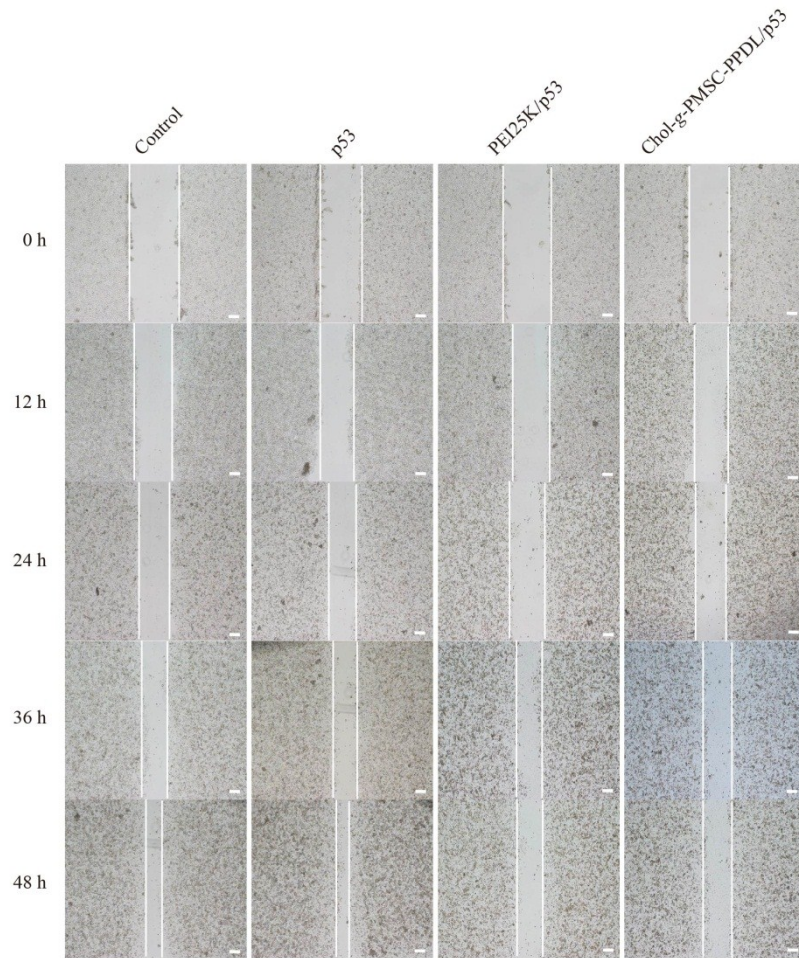
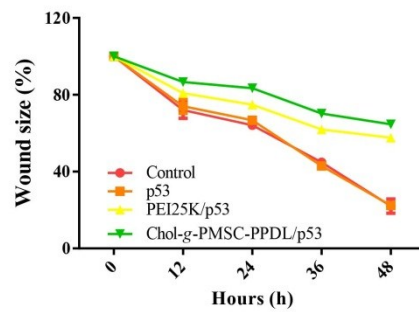
A**B**

Figure S9. Wound healing assay of HeLa cells after the carriers-mediated p53 transfection for different time (A) and the quantitative analysis of wound size (B). The average distance of cell migration was calculated from three representative zones. The scale bar is 100 μ m.

Table S1. Particle size and zeta potential of nanocomplexes formed by the carrier Chlo-
g-PMSC-PPDL and plasmid p3XFLAG-CMV-p53. Data are presented as mean value \pm
SD of triplicate experiments.

Mass ratio	Hydrodynamic size (nm)	Polydispersity index	Zeta potential (mV)
10:1	153.8 \pm 1.3	0.193	-11.0 \pm 1.1
20:1	115.6 \pm 1.2	0.212	-6.6 \pm 1.5
30:1	102.3 \pm 2.2	0.105	-4.1 \pm 1.2
40:1	89.1 \pm 1.8	0.157	+9.1 \pm 1.8
50:1	120.5 \pm 4.4	0.328	+12.1 \pm 2.1
60:1	139.7 \pm 7.6	0.294	+30.1 \pm 2.6
70:1	140.6 \pm 6.5	0.177	+45.7 \pm 5.4