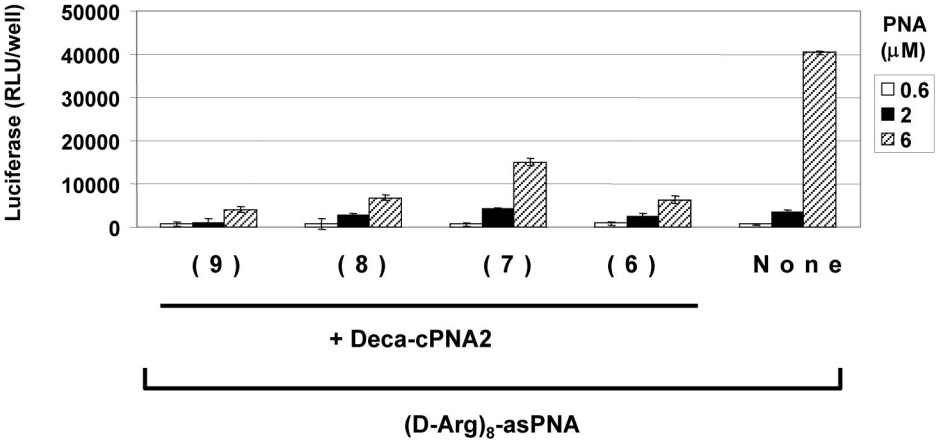

Fig. S1. Relative antisense activity in HeLa pLuc705 cells of octaarginine conjugated antisense PNA ((D-Arg)8-asPNA (PNA2787)) hybridized to decanoyl carrier PNA2 of different length (Deca-cPNA2(9-6 nucleobases), (PNA2927, 2955, 2953, 2951)) (targeting N-terminus of the antisense PNA). (D-Arg)8-asPNA was hybridized with the carrier CPP-PNA at 1:1 molar ratio and used for transfection at the indicated concentrations. After 24 h transfection, cells were subjected to the luciferase analysis. Each data set represents the mean ± SD of three independent experiments.

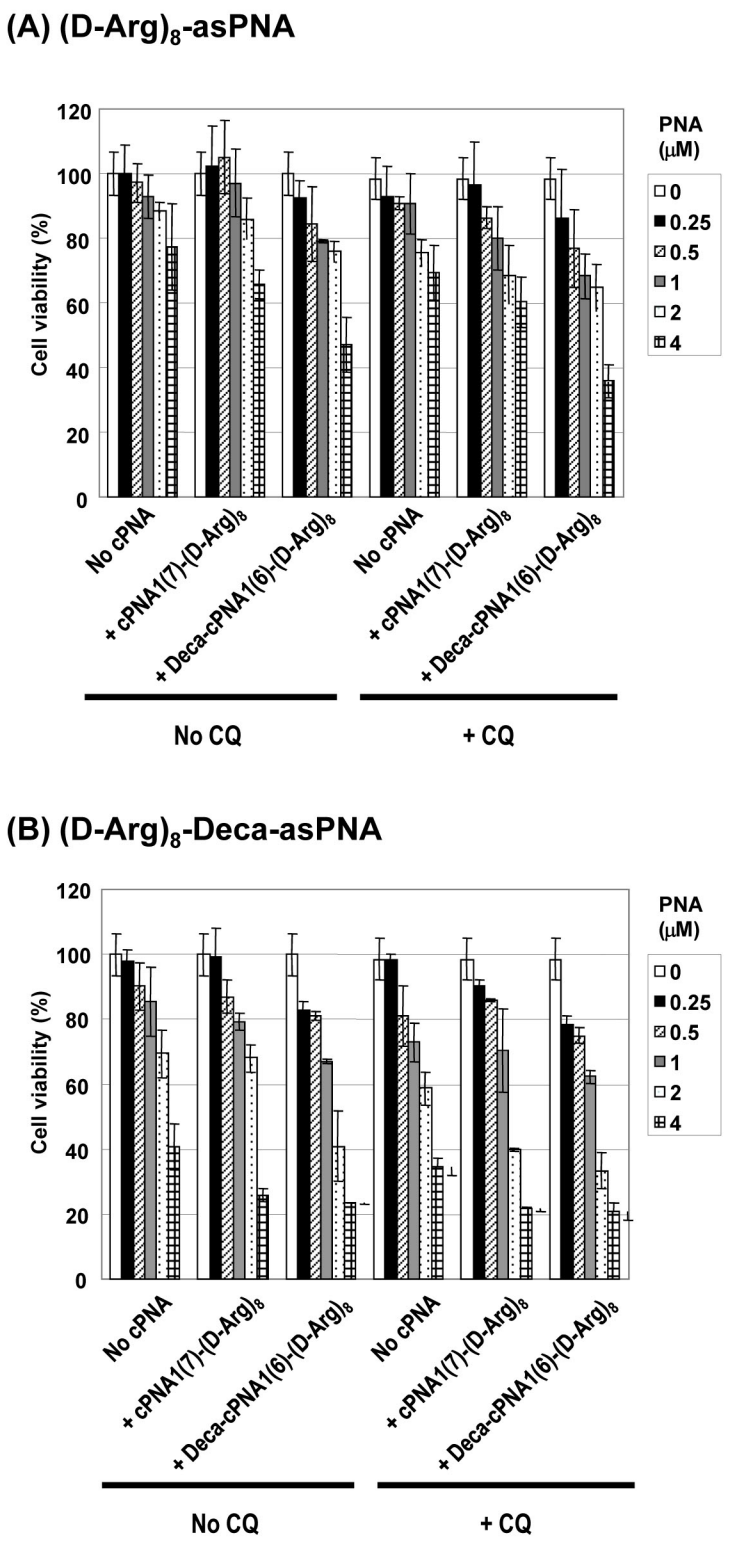

Fig. S2. Cellular toxicity in HeLa pLuc705 cells of two antisense CPP-PNAs ((A), (D-Arg)8-asPNA (PNA2787) and (B), (D-Arg)8-Deca-asPNA (PNA2802))) hybridized to carrier CPP-PNA (cPNA1(7)-(D-Arg)8 (PNA2958) or Deca-cPNA1(6)-(D-Arg)8 (PNA2957)). The antisense PNA was hybridized with the carrier CPP-PNA at 1:1 molar ratio and used for transfection at the indicated concentrations in the absence or presence of 100 μM chloroquine (CQ). After 24 h transfection, cell viability was measured using the MTS-assay (Promega). Each data set represents the mean ± SD of three independent experiments and absorbance from non-treated sample was set as 100%.

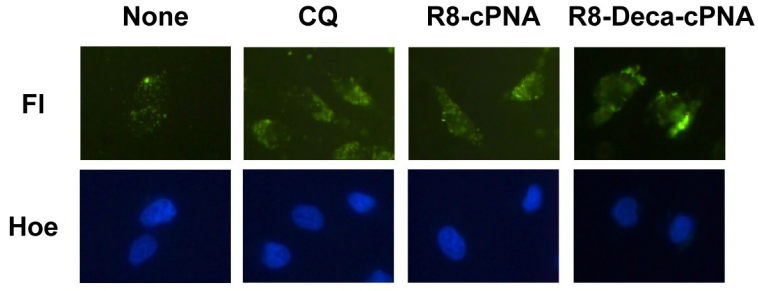

Fig. S3. Cellular uptake analysis of PNA in HeLa pLuc705 cells by fluorescence microscopy using a fluorescein (Fl)-labeled antisense CPP-PNA (Fl-(Arg)8-asPNA (PNA2919). The Fl-PNA was hybridized to the carrier CPP-PNA (cPNA1(7)-(D-Arg)8 (R8-cPNA, PNA2958) or Deca-cPNA1(6)-(D-Arg)8 (R8-Deca-cPNA, PNA2957)) at 1:1 molar ratio and used for transfection at 2 μM. For the chloroquine (CQ) treatment, 100 μM CQ was added to the OPTI-MEM medium. After 24 h transfection, the live cells were nuclear-stained with Hoechst33342 (Hoe) at 2 μg/mL for 10 min and analyzed by fluorescence microscopy at x500 magnification.

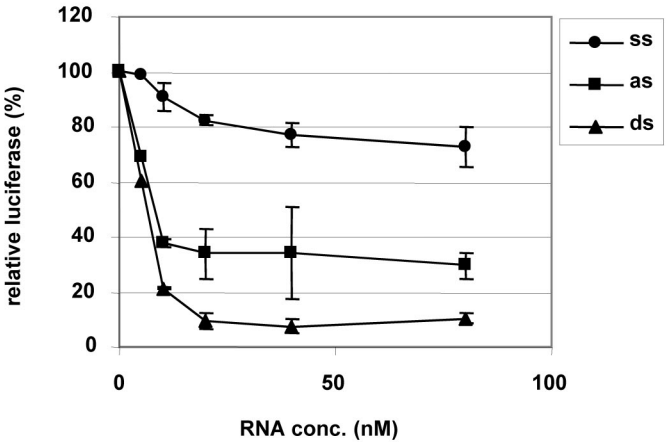

Fig. S4. Downregulation of luciferase in p53R cells (expressing normal luciferase gene) by single stranded or double stranded of siRNA (sense strand (ss), antisense strand (as)) and double-strand (ds)) delivered by cationic lipids. The siRNA was complexed with cationic lipid (LipofectAMINE2000) and used for transfection. After 24 h of transfection, the cells were subjected to the luciferase measurement and the luciferase activity was normalized by protein concentration and is presented as relative luciferase activity (%) using non-siRNA treated sample as 100%. Each data point represents the mean ± SD of three independent experiments.