

Supplementary Materials

Complexation of Oligo- and Polynucleotides with Methoxyphenyl-Functionalized Imidazolium Surfactants

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Table S1. The hydrodynamic diameter (D_H , nm) of MPI-n/ONu complexes depending on the molar ratio of components (r)

Compounds	Surfactant/ONu molar ratio (r)	D_H , nm
ONu	-	3.122±0.5
MPI-10/ONu	0.06	58.77±3
MPI-10/ONu	0.4	91.28±2
MPI-10/ONu	0.86	105.7±3
MPI-10/ONu	1.77	105.7±4
MPI-10/ONu	3.6	531.2±9
MPI-10/ONu	5.5	255±5
MPI-10/ONu	10	122.4±4
MPI-12/ONu	0.06	105.7±9
MPI-12/ONu	0.14	78.82±8
MPI-12/ONu	0.55	122.4±6
MPI-12/ONu	1.1	122.4±7
MPI-12/ONu	1.5	531.2±5
MPI-12/ONu	3.3	164.2±5
MPI-12/ONu	4.5	164.2±4
MPI-14/ONu	0.06	37.84±5
MPI-14/ONu	0.18	50.75±6
MPI-14/ONu	0.31	91.28±8
MPI-14/ONu	0.58	78.82±5
MPI-14/ONu	1.15	122.4±9
MPI-14/ONu	1.7	122.4±9
MPI-14/ONu	2.8	122.4±9

MPI-16/ONu	0.02	8.721±2
MPI-16/ONu	0.08	78.82±3
MPI-16/ONu	0.12	105.7±5
MPI-16/ONu	0.53	91.28±4
MPI-16/ONu	1.1	141.8±8
MPI-16/ONu	1.7	164.2±9
MPI-16/ONu	2.8	141.8±9

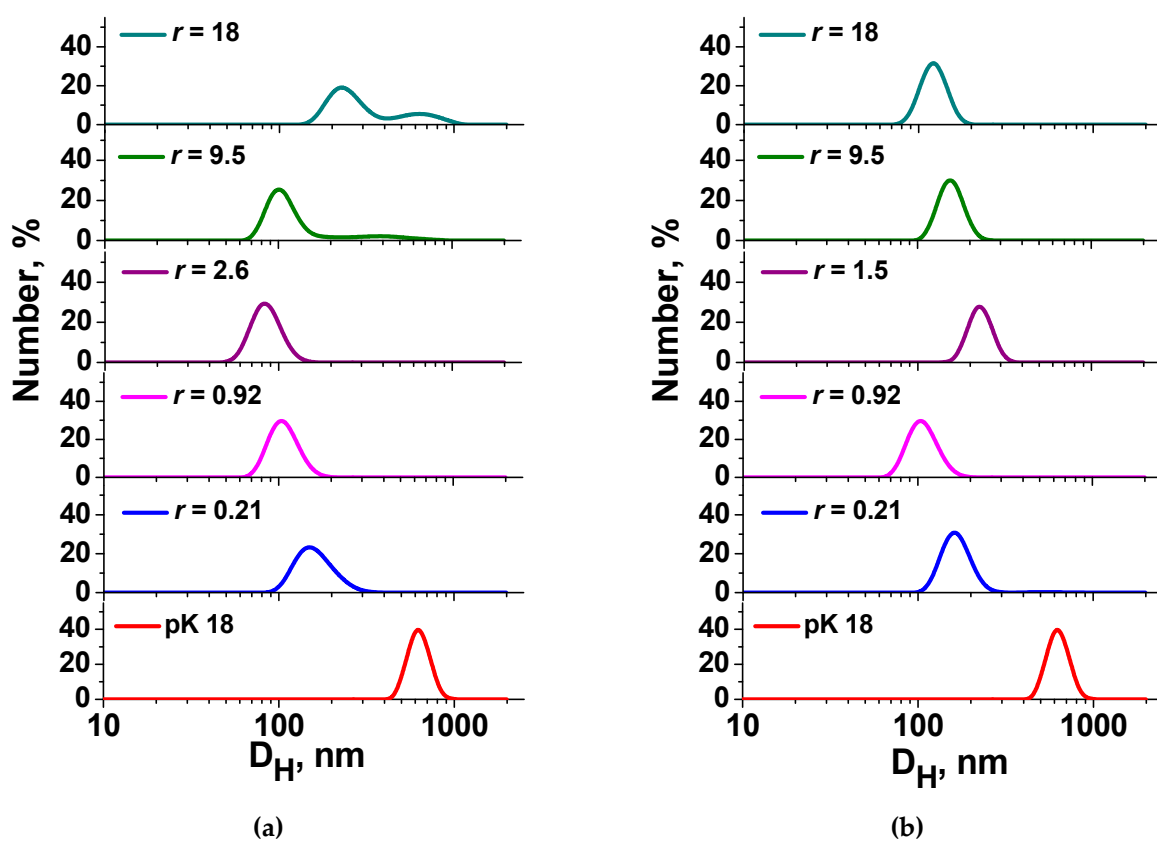
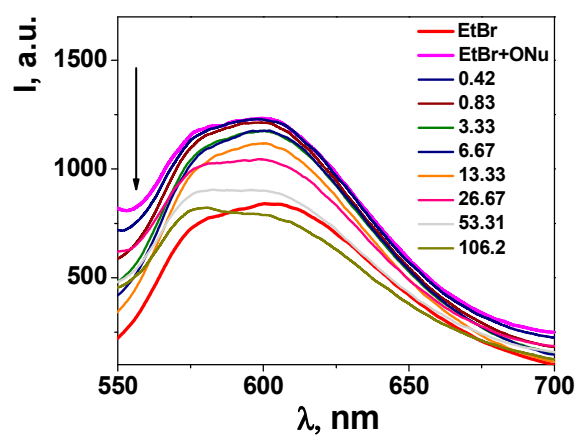
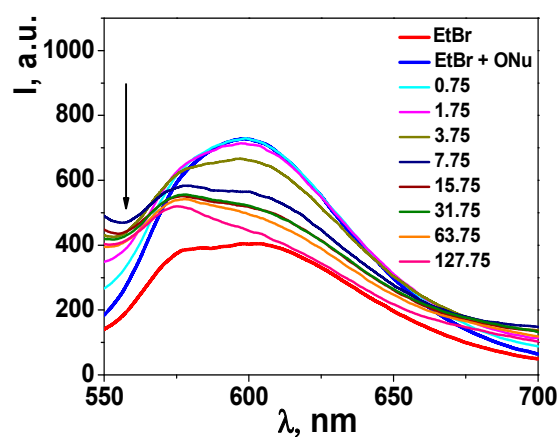


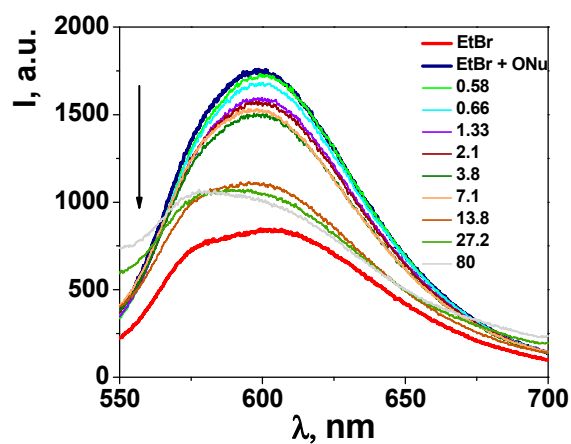
Figure S1. Number-averaged size distribution of the MPI-14/pK18 (a) and MPI-16/pK18 (b) complexes at different molar ratios; 25 °C



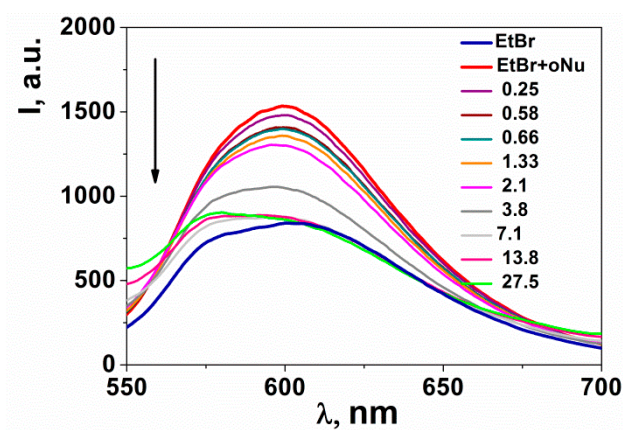
(a)



(b)

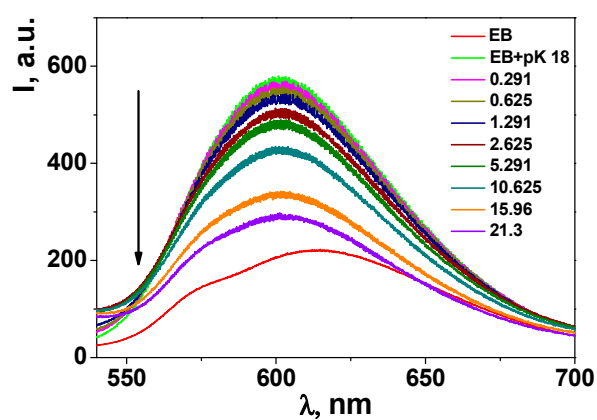


(c)

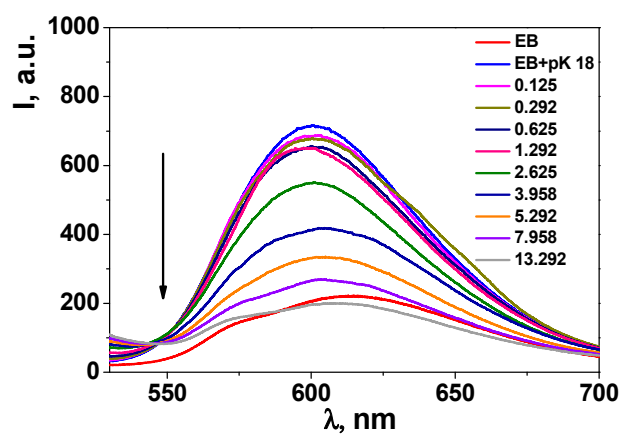


(d)

Figure S2. Fluorescence emission spectra of EB/ONu complexes in the presence of various amounts of MPI-n: (a) MPI-10/ONu, (b) MPI-12/ONu, (c) MPI-14/ONu, (d) MPI-16/ONu; 25 °C.



(a)



(b)

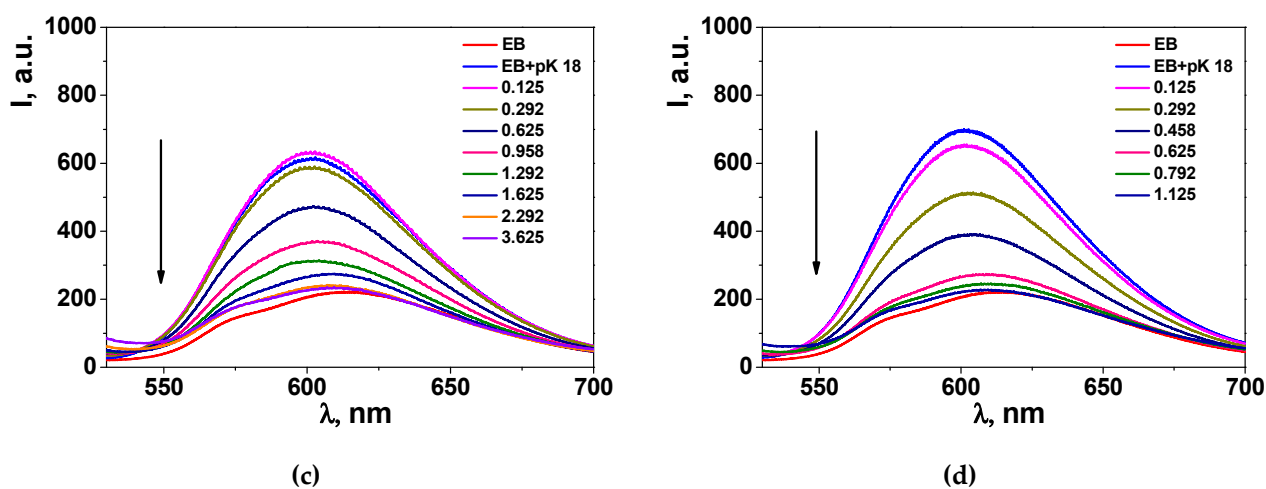


Figure S3. Fluorescence emission spectra of EB/pK18 complexes in the presence of various amounts of MPI-n: (a) MPI-10/pK18, (b) MPI-12/pK18, (c) MPI-14/pK18, (d) MPI-16/pK18; 25 °C.

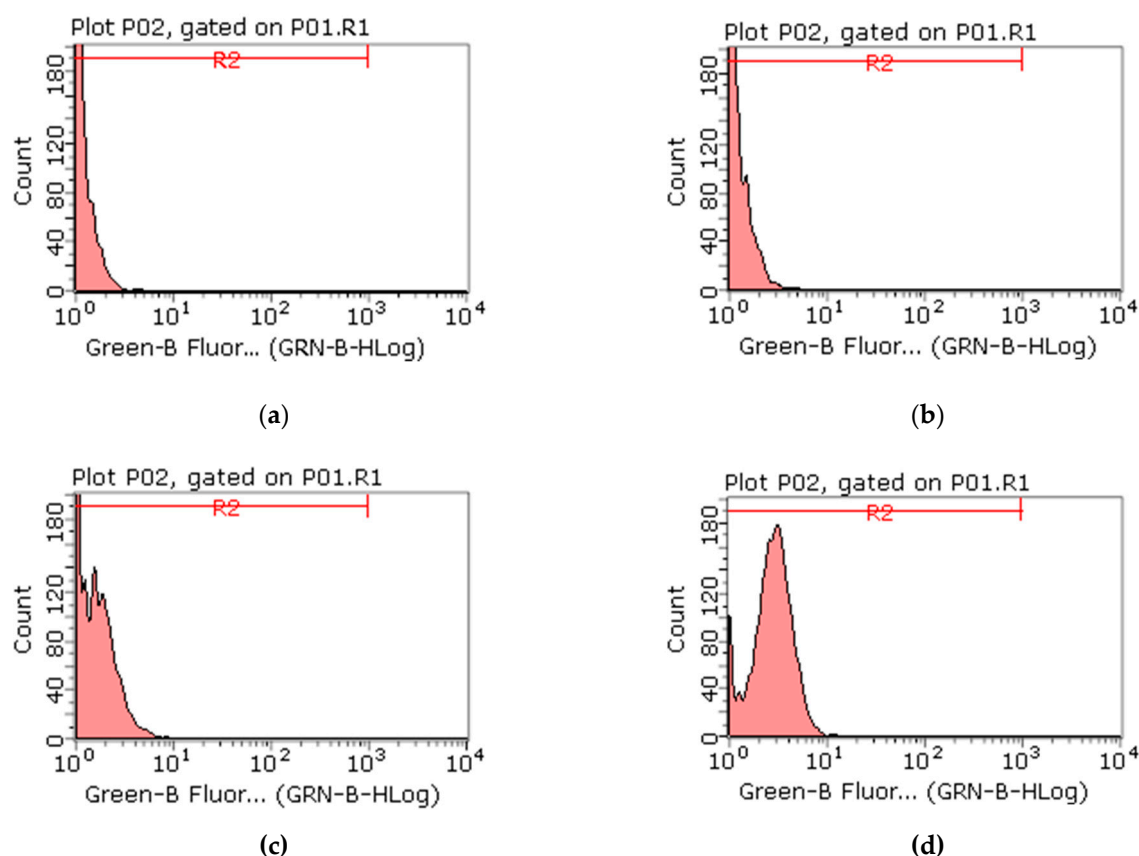
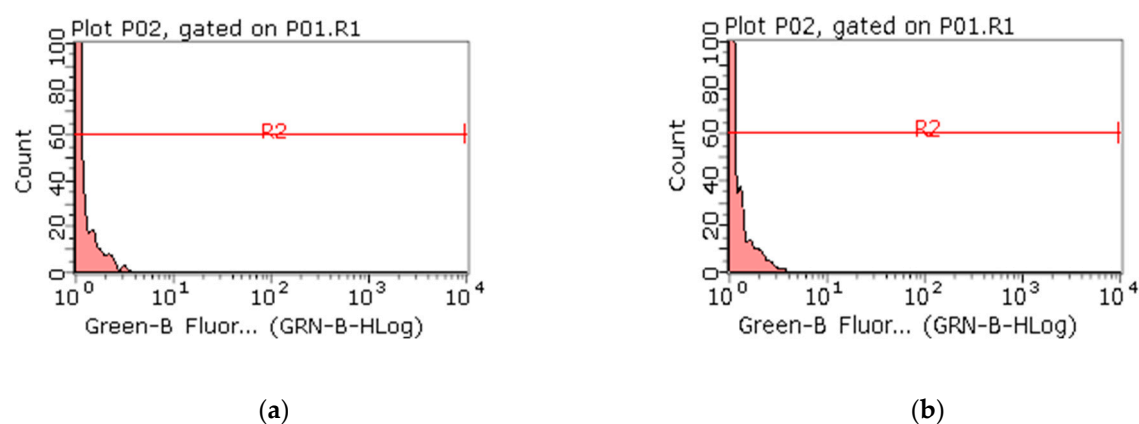
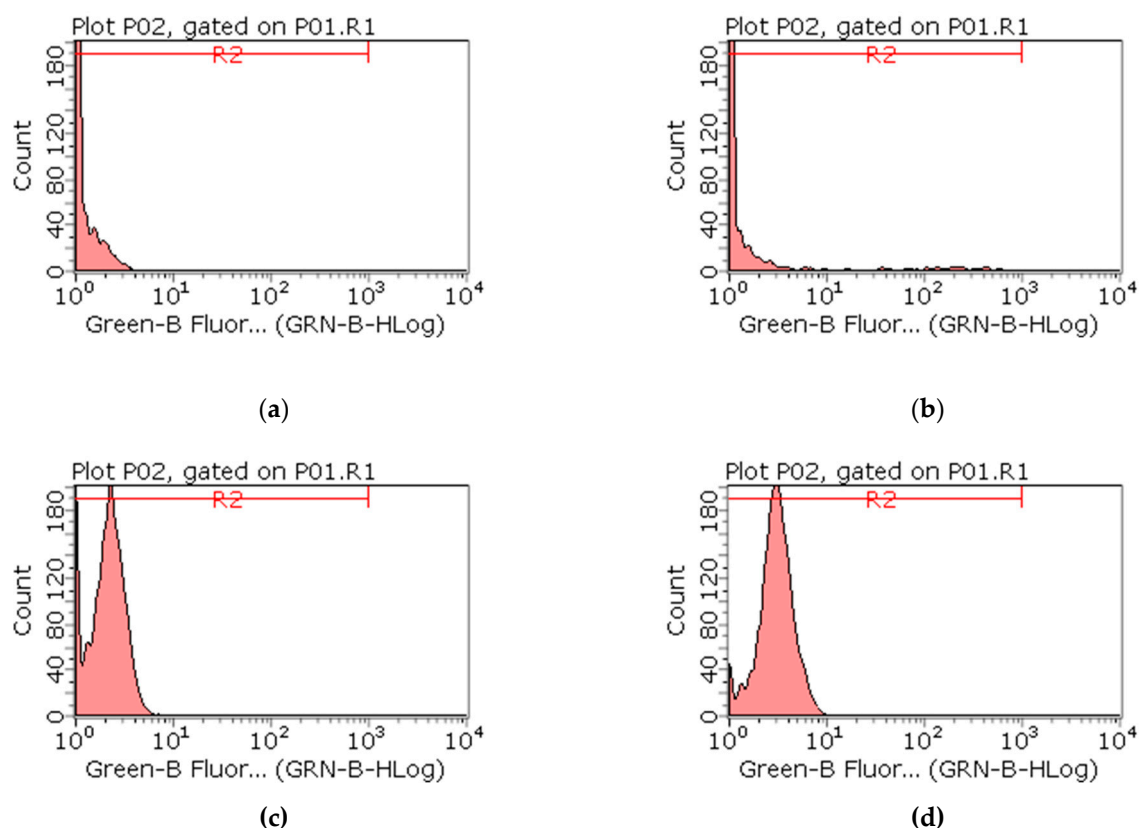


Figure S4. Distribution of green fluorescence in A549 cells cultured in the presence of MPI-n/pEGFP-N2 complexes for 24 h: (a) – Control (untreated cells), (b) – Lipofectamine 3000/pEGFP-N2, (c) – MPI-12(650 μ g/ml)/pEGFP-N2, (d) – MPI-16(325 μ g/ml)/pEGFP-N2. Red bar confines transfected cells region; percentage value indicates transfection efficacy relative to total cell number. Cells were treated with 4-times diluted complexes and cultured in α -MEM 0% FBS for 4 h. Lipofectamine 3000 was applied according to the manufacturer's protocol.



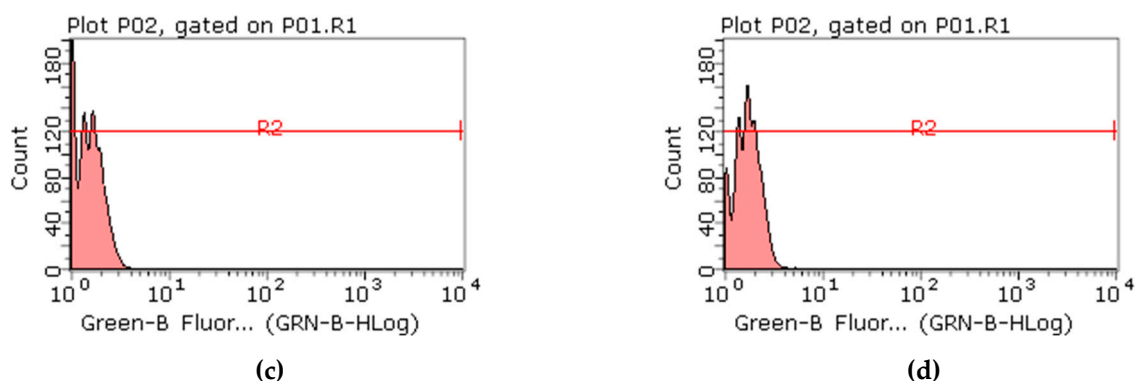


Figure S6. Figure. Distribution of green fluorescence in **A549** cells cultured in the presence of MPI-n/pEGFP-N2 complexes for 24 h: (a) – Control (untreated cells), (b) – Lipofectamine 3000/pEGFP-N2, (c) – MPI-12(650 $\mu\text{g/ml}$)/pEGFP-N2, (d) – MPI-16(325 $\mu\text{g/ml}$)/pEGFP-N2. Red bar confines transfected cells region; percentage value indicates transfection efficacy relative to total cell number. Cells were treated with 4-times diluted complexes and cultured in α -MEM/10% FBS for 4 h. Lipofectamine 3000 was applied according to the manufacturer's protocol.

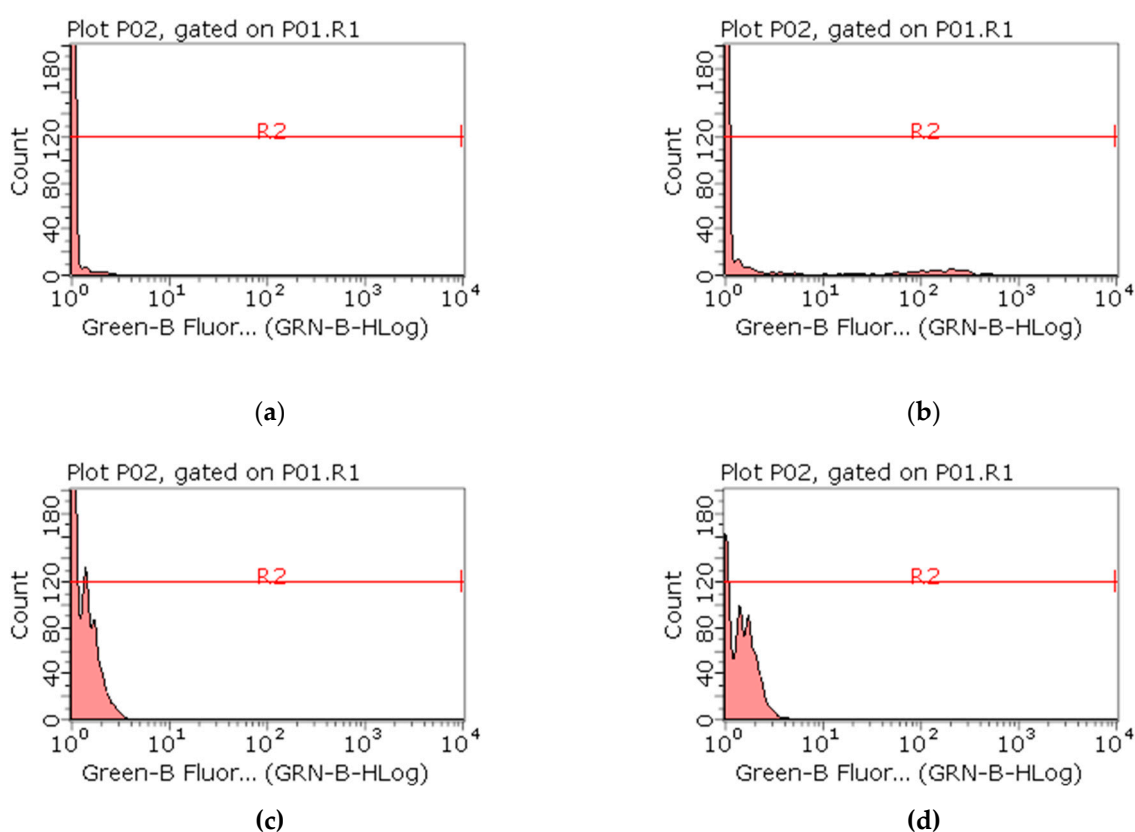


Figure S7. Distribution of green fluorescence in **M-HeLa** cells cultured in the presence of MPI-n/pEGFP-N2 complexes for 24 h: (a) – Control (untreated cells), (b) – Lipofectamine 3000/pEGFP-N2, (c) – MPI-12(650 $\mu\text{g/ml}$)/pEGFP-N2, (d) – MPI-16(325 $\mu\text{g/ml}$)/pEGFP-N2. Red bar confines transfected cells region; percentage value indicates transfection efficacy relative to total cell number. Cells were treated with 4-times diluted complexes and cultured in α -MEM/10% FBS for 4 h. Lipofectamine 3000 was applied according to the manufacturer's protocol.

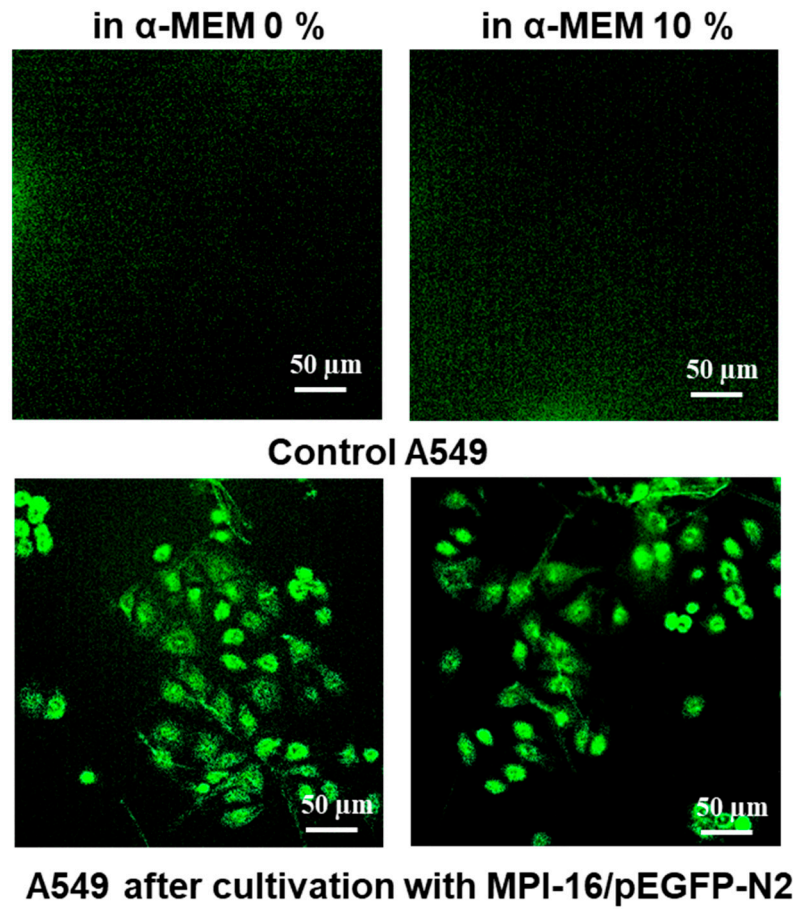


Figure S8. Representative fluorescent microphotographs of A549 cells transfected with MPI-16/pEGFP-N2 complexes under different conditions: 0% α -MEM and 10% α -MEM; cultivation 24 hours.

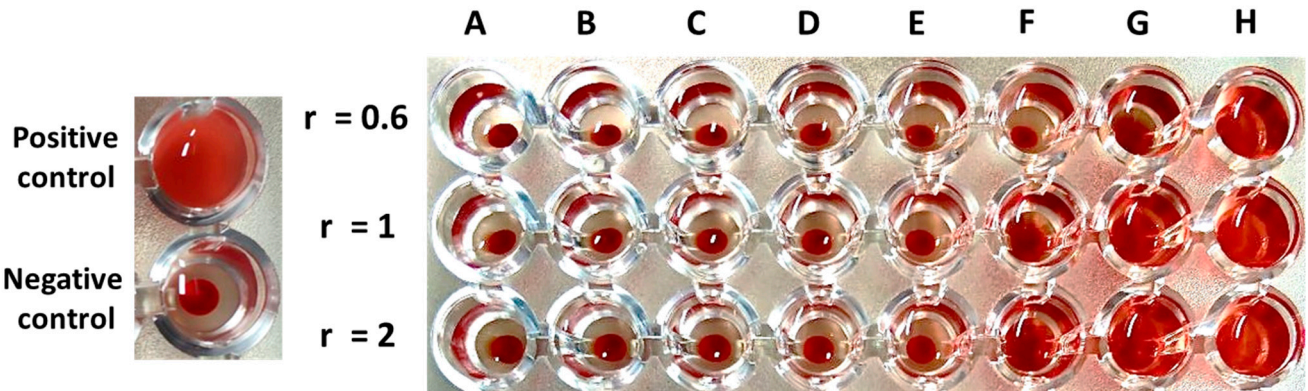


Figure S9. Photograph of microplate wells containing blood samples supplemented with MPI-12/ONu complexes at various r .