

Supporting Information

Amphiphilic Block Copolymers Enhance Nuclear Entry of Polyplex-Delivered DNA

Zhihui Yang^{*}, Gaurav Sahay^{*}, Srikanth Sriadibhatla^{*}, Alexander V. Kabanov^{*†}

^{*}Center for Drug Delivery and Nanomedicine and Department of Pharmaceutical Sciences, College of Pharmacy, University of Nebraska Medical Center, 985830 Nebraska Medical center, Omaha, NE 68198-5830, United States and [†]Faculty of Chemistry, M.V. Lomonosov Moscow State University, 119899 Moscow, Russia

Position	Symbol	Refseq	Description	Folds increased
3	Atf1	NM_007497	Activating transcription factor 1	2.9
4	Atf2	NM_009715	Activating transcription factor 2	4.6
30	Hmgb1	NM_010439	High mobility group box 1	2.3
72	Polr2a	NM_009089	Polymerase (RNA) II (DNA directed) polypeptide A	2.9
77	Rel	NM_009044	Reticuloendotheliosis oncogene	4.5
78	Rela	NM_009045	V-rel reticuloendotheliosis viral oncogene homolog A	2.4
70	Pcaf	NM_020005	P300/CBP-associated factor	2.2
84	Smad4	NM_008540	MAD homolog 4 (Drosophila)	4.3
6	Bcl3	NM_033601	B-cell leukemia/lymphoma 3	3.3
10	Card14	NM_130886	Caspase recruitment domain family, member 14	2.2
11	Card4	NM_172729	Caspase recruitment domain 4	2.2
108	Tradd	NM_001033161	TNFRSF1A-associated via death domain	3.2
110	Traf3	NM_011632	Tnf receptor-associated factor 3	2.1
112	Traf6	NM_009424	Tnf receptor-associated factor 6	2.8
66	Nalp12	XM_355971	NACHT, LRR and PYD containing protein 12	2.0
74	Ppp5c	NM_011155	Protein phosphatase 5, catalytic subunit	3.6
53	Map2k6	NM_011943	Mitogen activated protein kinase kinase 6	2.6
54	Map3k1	NM_011945	Mitogen activated protein kinase kinase kinase 1	3.0
56	Map3k3	NM_011947	Mitogen activated protein kinase kinase kinase 3	4.4
60	Map4k2	NM_009006	Mitogen activated protein kinase kinase kinase kinase 2	4.4
61	Mapk11	NM_011161	Mitogen-activated protein kinase 11	4.4
64	Mapk8	NM_016700	Mitogen activated protein kinase 8	4.1
87	Tgfbr1	NM_009370	Transforming growth factor, beta receptor I	2.1
88	Tgfbr2	NM_009371	Transforming growth factor, beta receptor II	2.8
71	Plk2	NM_152804	Polo-like kinase 2 (Drosophila)	6.4
80	Ripk1	NM_009068	Receptor (TNFRSF)-interacting serine-threonine kinase 1	4.0
99	Tnfrsf10b	NM_020275	Tumor necrosis factor receptor superfamily, member 10b	2.7
103	Tnfrsf7	NM_001033126	Tumor necrosis factor receptor superfamily, member 7	4.4
100	Tnfrsf1a	NM_011609	Tumor necrosis factor receptor superfamily, member 1a	2.3
113	Vapa	NM_013933	Vesicle-associated membrane protein, associated protein A	2.2
8	Card10	NM_130859	Caspase recruitment domain family, member 10	5.1
105	Tnfrsf14	NM_019418	Tumor necrosis factor (ligand) superfamily, member 14	3.6
35	Ikbkb	NM_010546	Inhibitor of KappaB Kinase beta	1.6
5	Bcl10	NM_009740	B-cell leukemia/lymphoma 10	2.9
22	Edaradd	NM_133643	EDAR (ectodysplasin-A receptor)-associated death domain	4.3
37	Ikbkg	NM_010547	Inhibitor of KappaB Kinase gamma	1.5
32	Icam1	NM_010493	Intercellular adhesion molecule	3.9
42	Il6	NM_031168	Interleukin 6	2.5
48	Lta	NM_010735	Lymphotoxin A	4.7

Table S-1. Effect of Pluronic P85 on the expression of NFκB related genes in C2C12-CMV^{luc} cells. Cells were exposed to 1% Pluronic P85 for 5 min, washed by PBS and incubated for additional 3 h. Total RNA was assayed using Oligo GEArray® Mouse NFκB Signaling Pathway Microarray (see **Figure 7** for a representative gene array) and gene expression was analyzed by GEArray Expression Analysis Suite software (see http://www.superarray.com/gene_array_product/HTML/OMM-025.html for detailed list of genes and layout). Only genes exhibiting at least 2-fold increase in expression are presented. (i) NFκB pathway: (3, 4, 30, 72, 77, 78, 70, 84) transcription factors; (6, 10, 11, 108, 110, 112, 66, 74) other factors; (53, 54, 56, 60, 61, 64, 87, 88, 71, 80) kinases; (99, 103) ligands and receptors; (100, 113) inflammatory response, extracellular or membrane molecules. (ii) activation of NFκB pathway: (8, 105) ligands and receptors; (35, 5, 22) IκB kinase/NFκB cascade; (37) transcription factor; (32) extracellular or membrane molecules; (iii) NFκB responsive genes: (42, 48) ligands and receptors, or cytokines.