

Supporting Information for:

Multidisciplinary Approach to the Transfection of Plasmid DNA by a Non-Viral Nanocarrier Based on a Gemini-Bolaamphiphilic Hybrid Lipid

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Table S1. Hydrodynamic diameter (D_h) and polydispersity (PDI) values of $C_6C_{22}C_6$ /DOPE-pDNA lipoplexes at several effective charge ratios (ρ_{eff}) and two molar compositions of the cationic lipid in the mixed lipids ($\alpha = 0.2$ and 0.5). Errors are less than 10%

	$\rho_{\text{eff}} = 4$		$\rho_{\text{eff}} = 10$	
	D_h (nm)	PDI	D_h (nm)	PDI
$\alpha = 0.2$				
$C_6C_{22}C_6$ /DOPE- pEGFP-C3	129	0.25	134	0.24
$C_6C_{22}C_6$ /DOPE- pCMV-Luc	130	0.23	115	0.19
$\alpha = 0.5$				
$C_6C_{22}C_6$ /DOPE- pEGFP-C3	161	0.15	141	0.11
$C_6C_{22}C_6$ /DOPE- pCMV-Luc	212	0.34	183	0.30

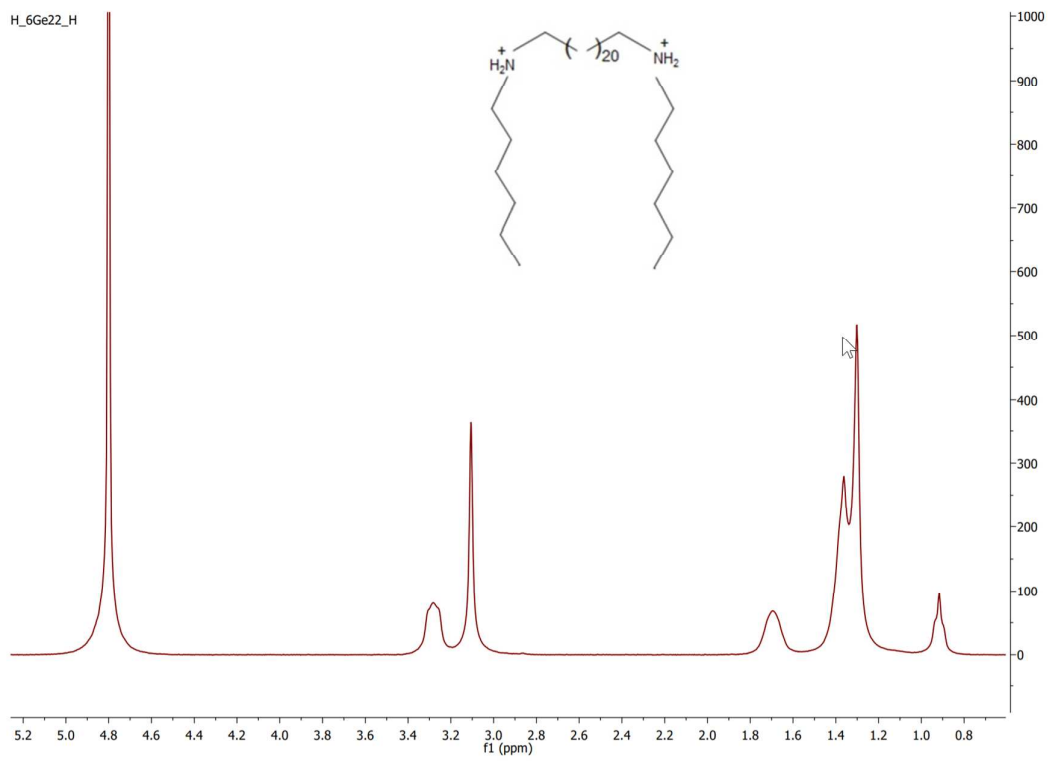


Figure S1. ^1H NMR spectrum (300 MHz, D_2O , 25°C) of $\text{C}_6\text{C}_{22}\text{C}_6$.

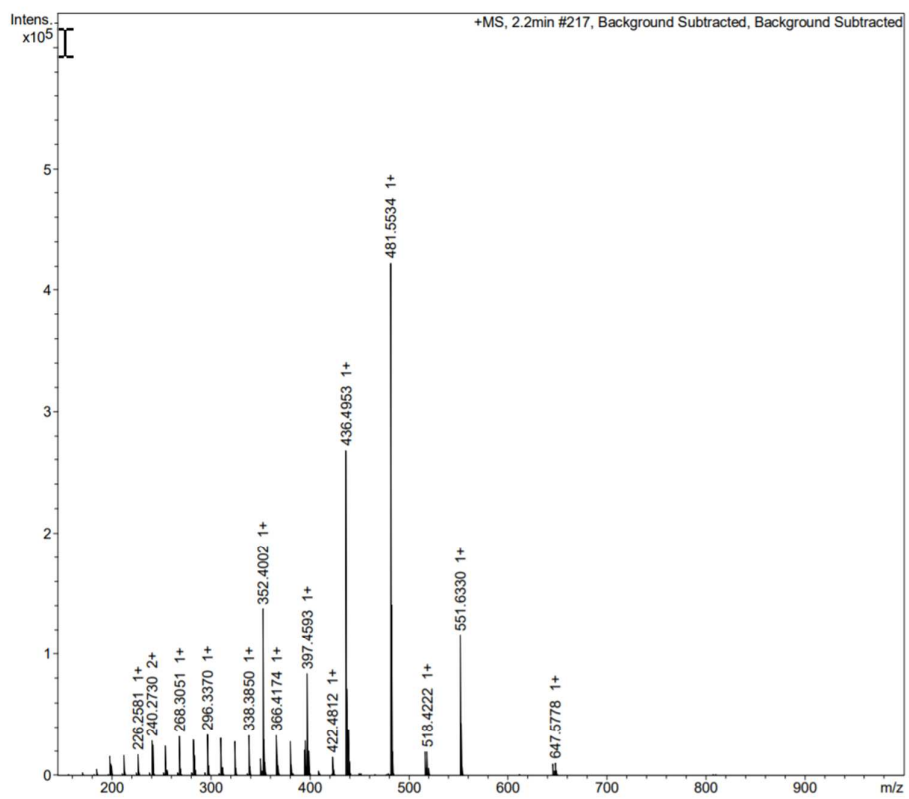


Figure S2. Electrospray ionization mass spectrum of $C_6C_{22}C_6$.

Table S2. Data of the electrospray ionization mass spectrum of C₆C₂₂C₆

#	m/z	I	Res.	FWHM	z	Mol. Mass	#	m/z	I	Res.	FWHM	z	Mol. Mass
1	156.1790	591	12456	0.0125			67	380.4331	28733	13523	0.0281	1+	380.4333
2	170.1938	2002	10909	0.0156			68	381.4369	8789	13588	0.0281	1+	380.4333
3	182.1932	596	9406	0.0194			69	382.4406	1478	12889	0.0297	1+	380.4333
4	184.2100	5346	10468	0.0176	1+	184.2100	70	394.4491	21254	16872	0.0234		
5	185.2130	824	11169	0.0166	1+	184.2100	71	395.4457	29390	13476	0.0293	1+	395.4453
6	196.2109	1094	12004	0.0163			72	396.4494	7669	14171	0.0280	1+	395.4453
7	197.2182	470	12691	0.0155			73	397.4593	84160	18115	0.0219	1+	397.4591
8	198.2259	15792	13671	0.0145	2+	395.4453	74	398.4631	20538	14547	0.0274	1+	397.4591
9	198.7259	1042	14980	0.0133	2+	395.4453	75	399.4681	2616	14865	0.0269	1+	397.4591
10	199.2317	9963	10514	0.0189	2+	397.4591	76	408.4660	4035	13222	0.0309		
11	199.7338	2560	11275	0.0177	2+	397.4591	77	409.4694	1399	15153	0.0270		
12	200.2358	639	16677	0.0120	2+	397.4591	78	422.4812	15562	14388	0.0294	1+	422.4814
13	210.2281	1442	10367	0.0203			79	423.4856	5130	15442	0.0274	1+	422.4814
14	212.2421	16646	12773	0.0166	1+	212.2423	80	436.4953	268760	19499	0.0224	1+	436.4964
15	213.2466	2964	14189	0.0150	1+	212.2423	81	437.4991	71871	15086	0.0290	1+	436.4964
16	224.2426	2056	13410	0.0167			82	438.5093	38766	13903	0.0315	1+	436.4964
17	226.2581	17362	10905	0.0207	1+	226.2581	83	439.5154	11624	16139	0.0272	1+	436.4964
18	227.2611	3165	11324	0.0201	1+	226.2581	84	440.5191	1645	13791	0.0319	1+	436.4964
19	228.2669	426	12664	0.0180	1+	226.2581	85	449.1657	1526	16582	0.0271		
20	238.2580	2082	11552	0.0206			86	451.1636	1291	13600	0.0332		
21	240.2730	29535	12534	0.0192	2+	479.5386	87	465.5232	827	13732	0.0339		
22	240.7727	1510	11063	0.0218	2+	479.5386	88	477.1995	896	13113	0.0364		
23	241.2790	25405	13093	0.0184	2+	481.5533	89	479.1957	1345	15427	0.0311		
24	241.7808	6578	11051	0.0219	2+	481.5533	90	480.6936	596	8571	0.0561		
25	242.2835	1653	11065	0.0219	2+	481.5533	91	481.5534	423029	16798	0.0287	1+	481.5533
26	252.2733	2229	11054	0.0228			92	482.5567	140969	15463	0.0312	1+	481.5533
27	253.2770	461	11464	0.0221			93	483.5616	19608	13718	0.0353	1+	481.5533
28	254.2889	24869	10803	0.0235	1+	254.2890	94	484.5670	1957	13689	0.0354	1+	481.5533
29	255.2927	4660	11261	0.0227	1+	254.2890	95	516.4241	19777	15222	0.0339	1+	516.4243
30	256.2963	470	13387	0.0191	1+	254.2890	96	517.4282	6332	15016	0.0345	1+	516.4243
31	266.2902	2532	12110	0.0220			97	518.4222	19928	14846	0.0349	1+	518.4222
32	268.3051	32777	13132	0.0204	1+	268.3051	98	519.4254	5692	14390	0.0361	1+	518.4222
33	269.3082	5778	11232	0.0240	1+	268.3051	99	520.4306	982	15002	0.0347	1+	518.4222
34	270.3163	600	23086	0.0117	1+	268.3051	100	551.6330	116040	16377	0.0337	1+	551.6333
35	280.3056	2318	11242	0.0249			101	552.6370	43672	16043	0.0344	1+	551.6333
36	281.3099	460	12735	0.0221			102	553.6406	7657	14594	0.0379	1+	551.6333
37	282.3208	30174	11271	0.0250	1+	282.3214	103	554.6505	626	21687	0.0256	1+	551.6333
38	283.3255	16649	11249	0.0252	1+	282.3214	104	611.6637	700	14485	0.0422		
39	283.8293	4633	11525	0.0246	2+	566.6515	105	612.6635	415	16737	0.0366		
40	284.3314	1793	12980	0.0219	1+	282.3214	106	613.6750	78	21300	0.0288		
41	294.3208	2560	11706	0.0251			107	645.5798	9513	15018	0.0430	1+	645.5797
42	296.3370	34325	12699	0.0233	1+	296.3372	108	646.5828	3512	13418	0.0482	1+	645.5797
43	297.3410	7858	13048	0.0228	1+	296.3372	109	647.5778	10237	15364	0.0421	1+	647.5780
44	298.3514	839	22504	0.0133	1+	296.3372	110	648.5815	3820	14709	0.0441	1+	647.5780
45	308.3380	1610	12045	0.0256			111	649.5906	632	15876	0.0409	1+	647.5780
46	310.3530	31480	12971	0.0239	1+	310.3533	112	650.5768	168	20672	0.0315	1+	647.5780
47	311.3575	6657	12356	0.0252	1+	310.3533	113	711.5964	172	20577	0.0346		
48	312.3629	1023	13317	0.0235	1+	310.3533	114	712.5963	109	29860	0.0239		
49	322.3518	506	13751	0.0234			115	739.6361	186	27003	0.0274		
50	324.3692	28683	15646	0.0207	1+	324.3693	116	779.4538	390	20577	0.0379		
51	325.3726	6330	12431	0.0262	1+	324.3693	117	780.4526	189	15064	0.0518		
52	326.3780	882	13723	0.0238	1+	324.3693	118	781.4500	462	17287	0.0452		
53	336.3708	1861	12546	0.0268			119	782.4543	206	16160	0.0484		
54	337.3750	516	18356	0.0184			120	807.4838	891	18478	0.0437		
55	338.3850	33288	13311	0.0254	1+	338.3854	121	808.4861	230	14389	0.0562		
56	339.3897	7274	12009	0.0283	1+	338.3854	122	809.4815	900	14853	0.0545		
57	340.3961	1037	12507	0.0272	1+	338.3854	123	810.4821	334	14229	0.0570		
58	350.3860	13723	13336	0.0263	1+	350.3860	124	811.4713	65	36345	0.0223		
59	351.3893	3493	12994	0.0270	1+	350.3860	125	835.5156	401	14757	0.0566		
60	352.4002	137820	13562	0.0260	1+	352.4009	126	836.5209	212	24924	0.0336		
61	353.4045	29828	12204	0.0290	1+	352.4009	127	837.5177	510	13287	0.0630		
62	354.4142	10931	11626	0.0305	1+	352.4009	128	838.5131	245	15755	0.0532		
63	355.4200	2329	13570	0.0262	1+	352.4009							
64	366.4174	33410	16355	0.0224	1+	366.4174							
65	367.4207	8056	14141	0.0260	1+	366.4174							
66	368.4255	1290	12756	0.0289	1+	366.4174							