

Electronic Supplementary Information

**A novel non-viral gene vector for hepatocyte-targeting and in-situ monitoring of
DNA delivery in single cells**

1. The figures of 1S, 2S, 3S and 4S	2
2. Spectra	4

1. The figures of 1S, 2S, 3S and 4S.

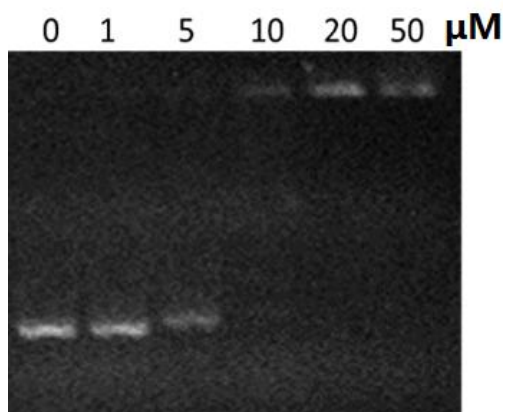


Fig. 1S Agarose gel electrophoresis assay to investigate the pUC18DNA condensation induced by different concentrations of lipid **1** in 50 mM HEPES buffer (pH = 7.4). [DNA] = 9 $\mu\text{g}/\text{mL}$, 37 °C incubate 5 minutes.

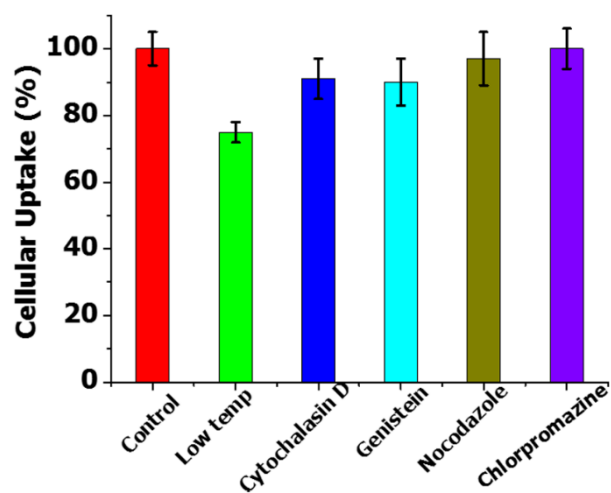


Fig. 2S Cellular uptake of **1**/DNA complexes (30 μM) quantified by flow cytometry analysis in HepG2 cells at 4 °C or in the presence of various endocytic inhibitors.

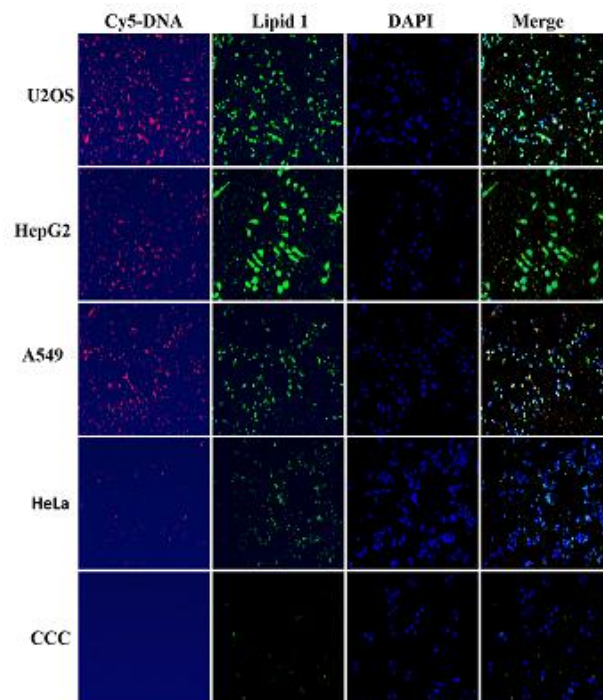


Fig. 3S. Confocal laser scanning microscopy imagines of cellular uptake of **1**/DNA complexes (30 μ M) in different cells.

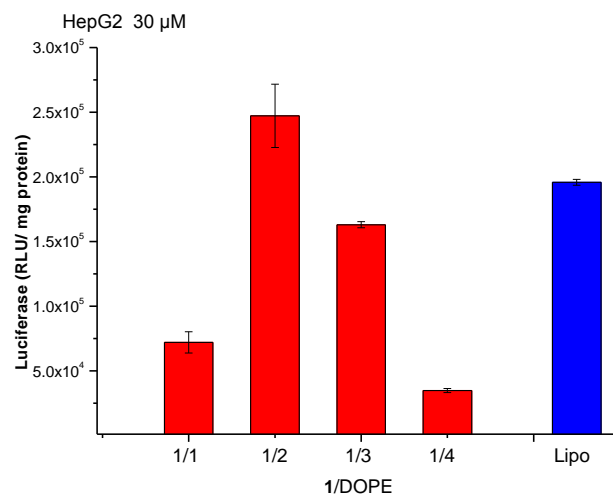
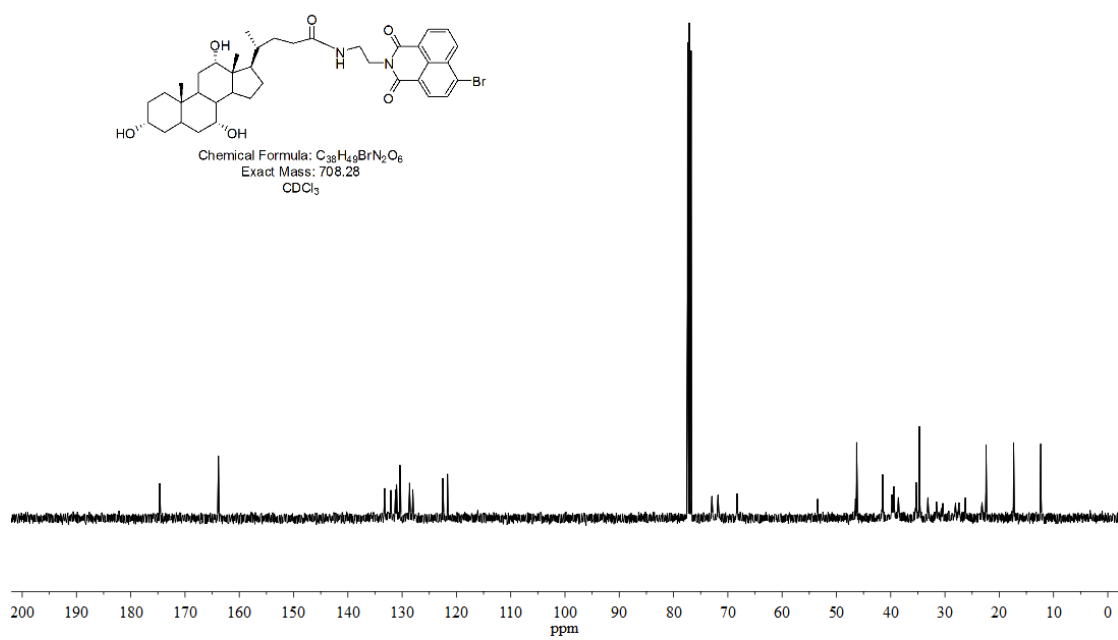
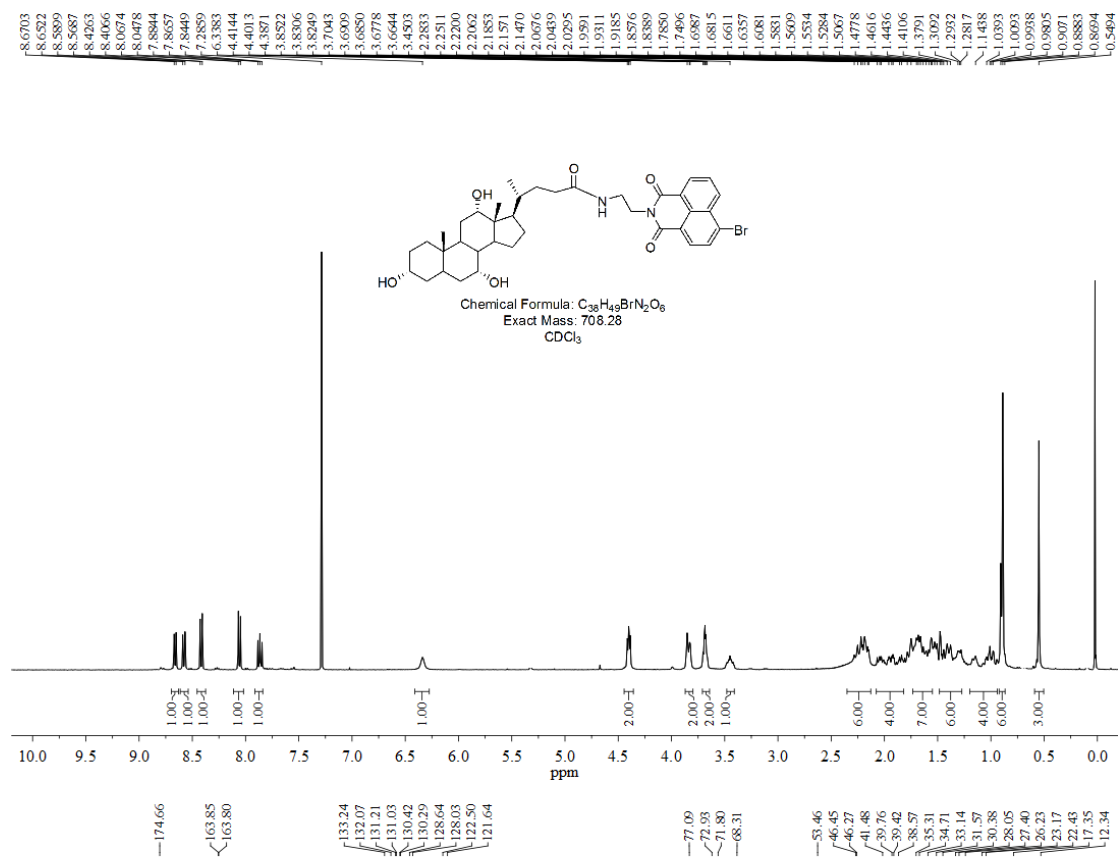
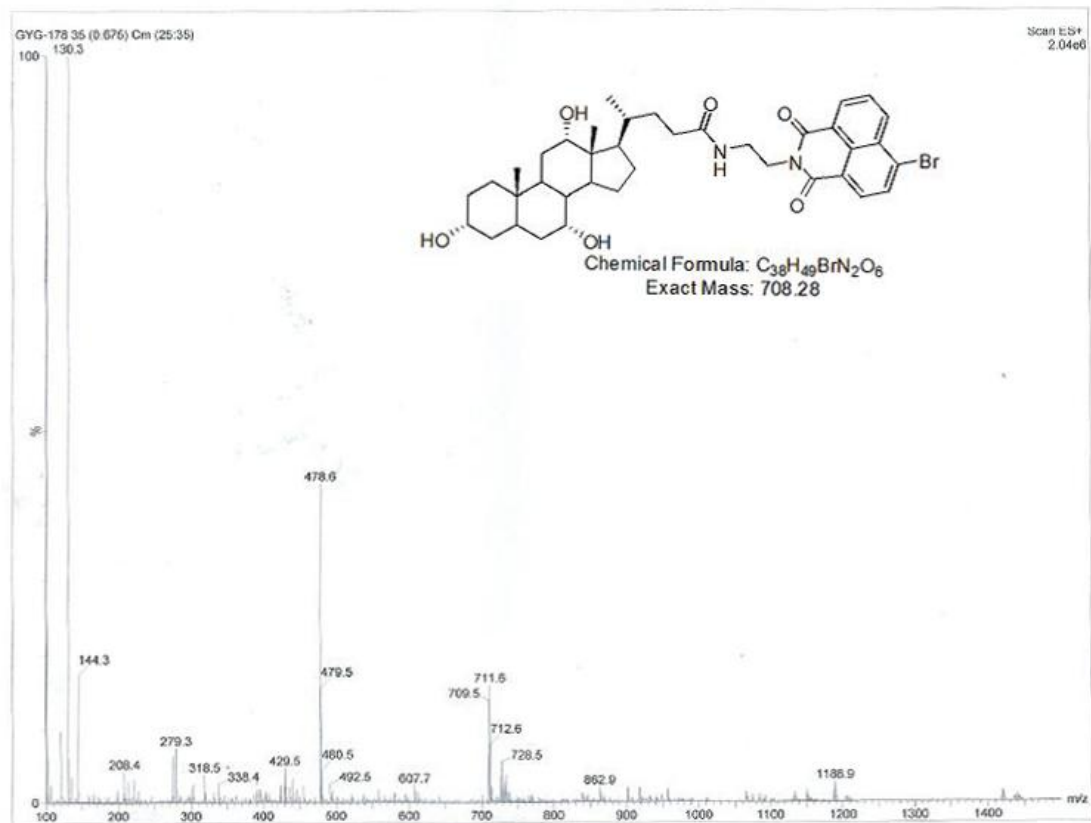
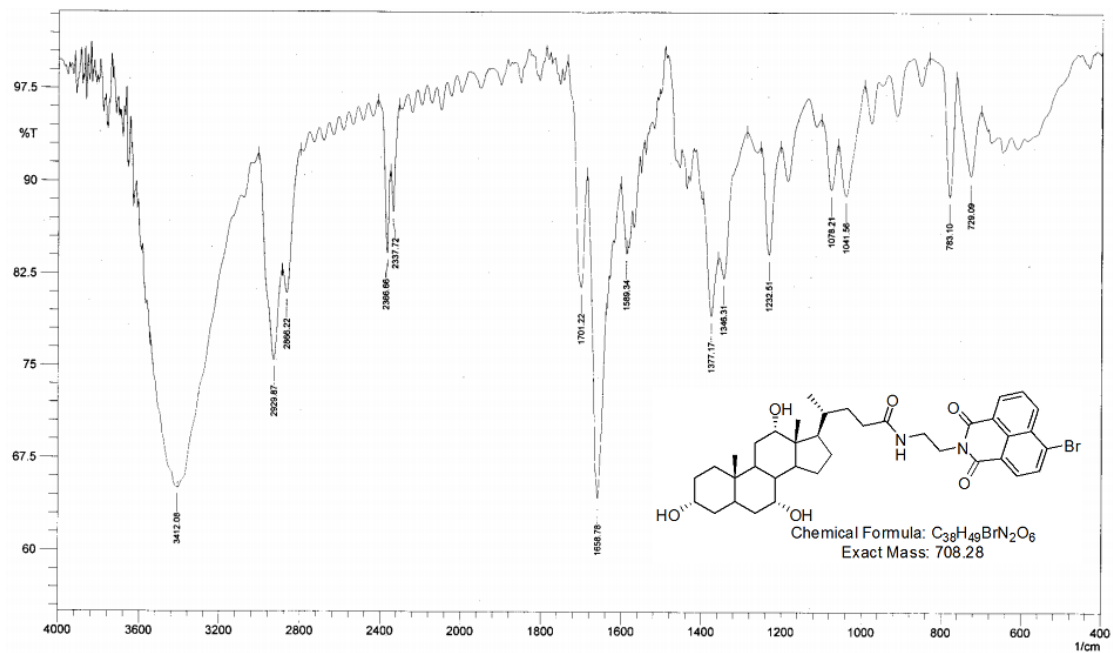
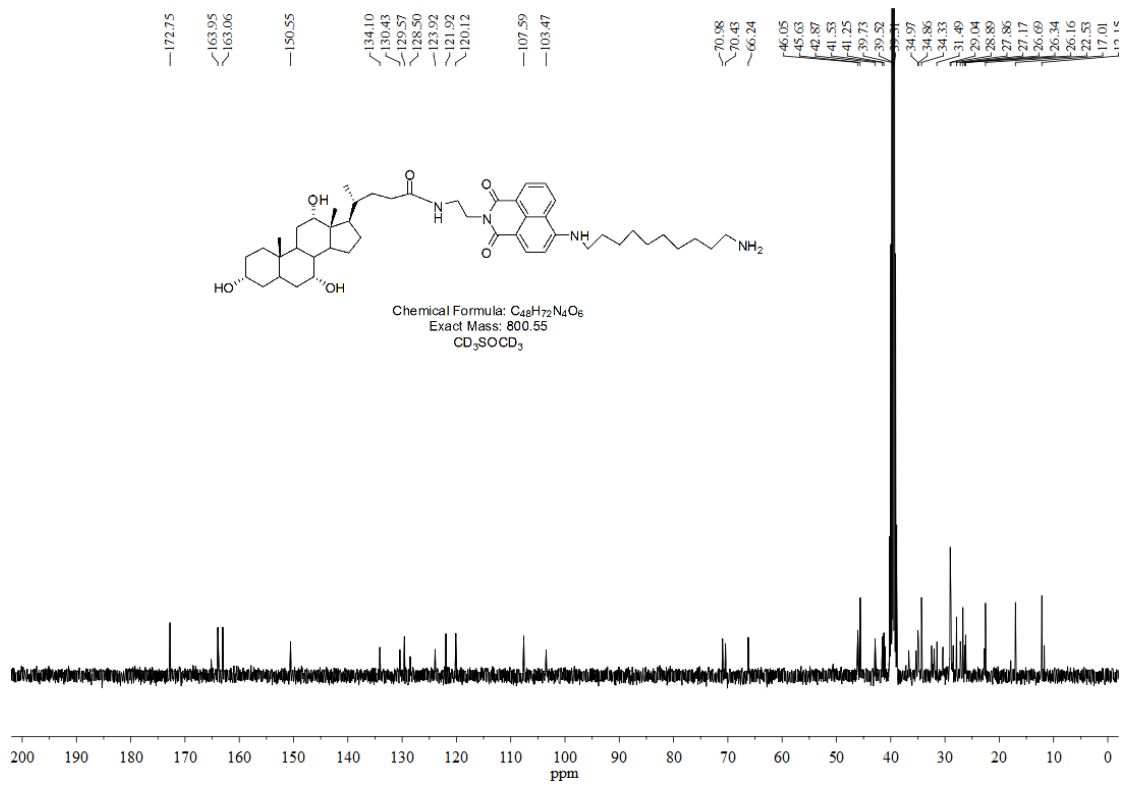
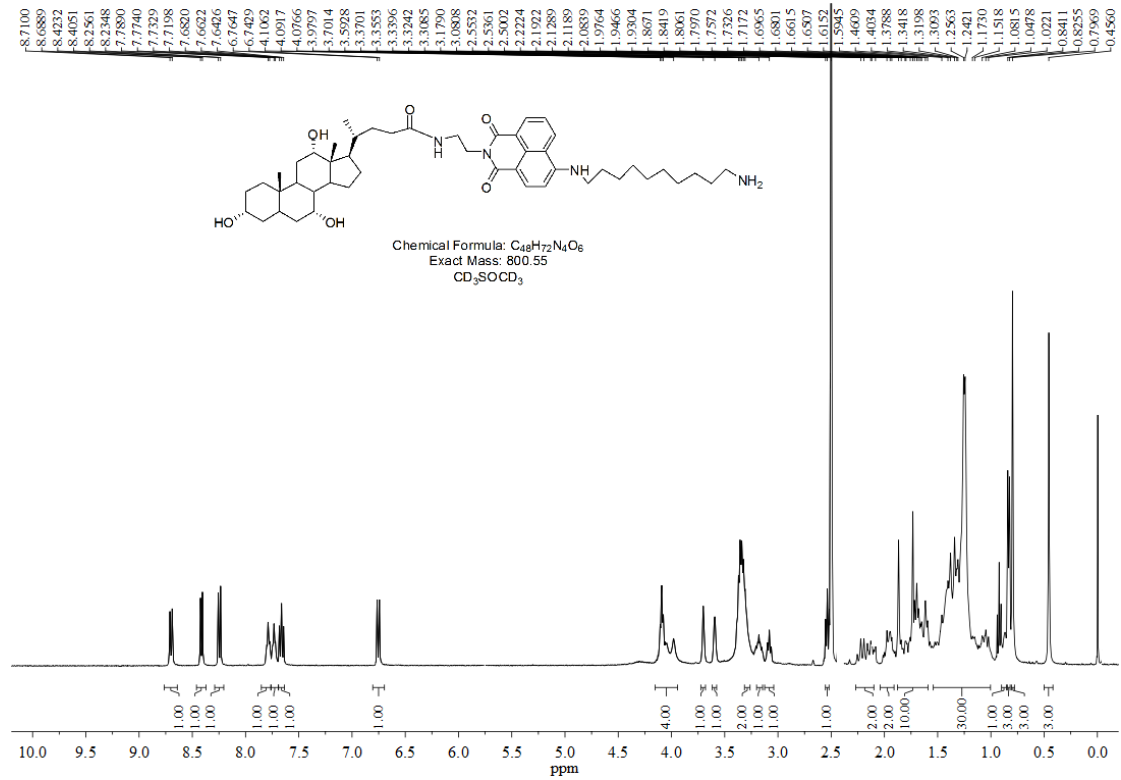


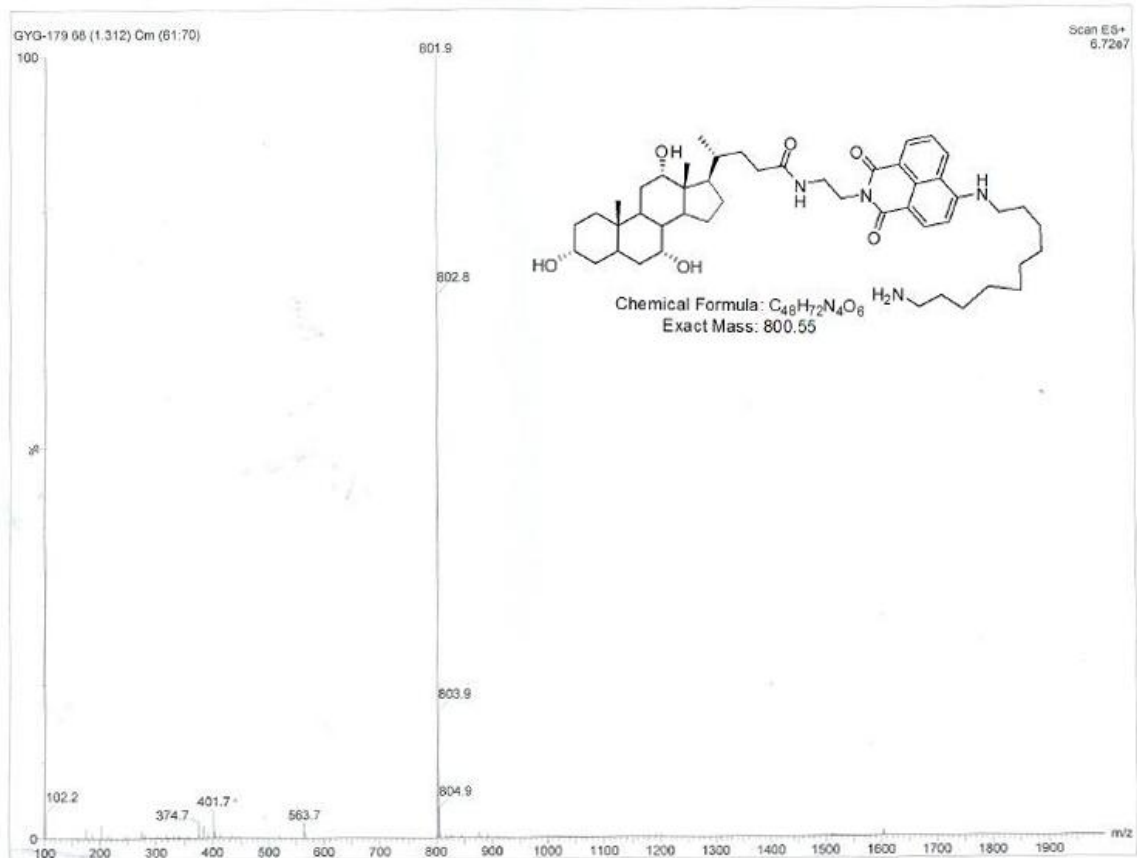
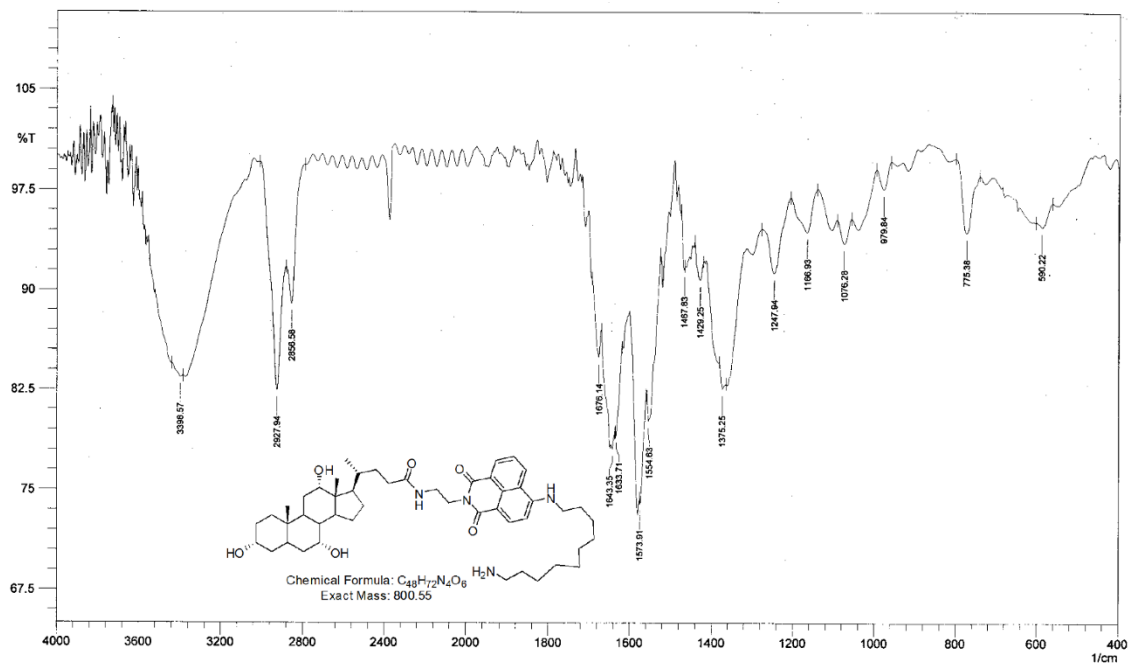
Fig. 4S Luciferase gene expression transfected by DNA complex of **1** (30 μ M) with different ratio of DOPE in HepG2 cells.

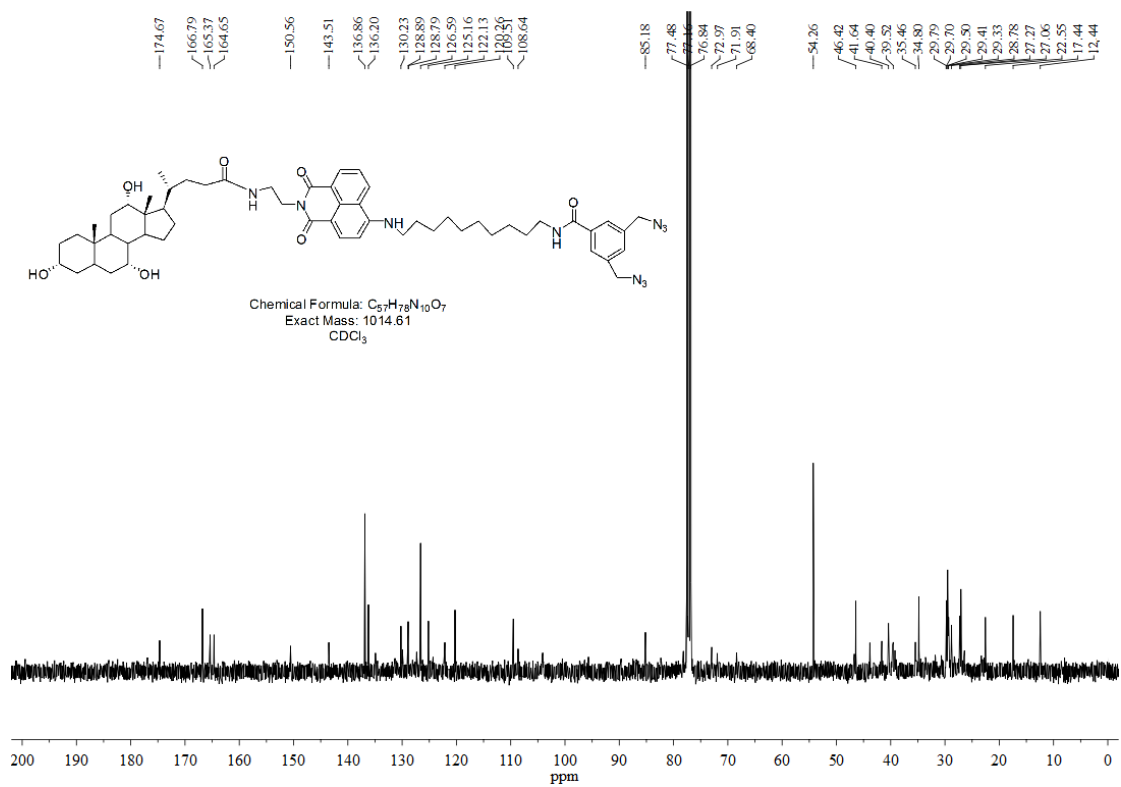
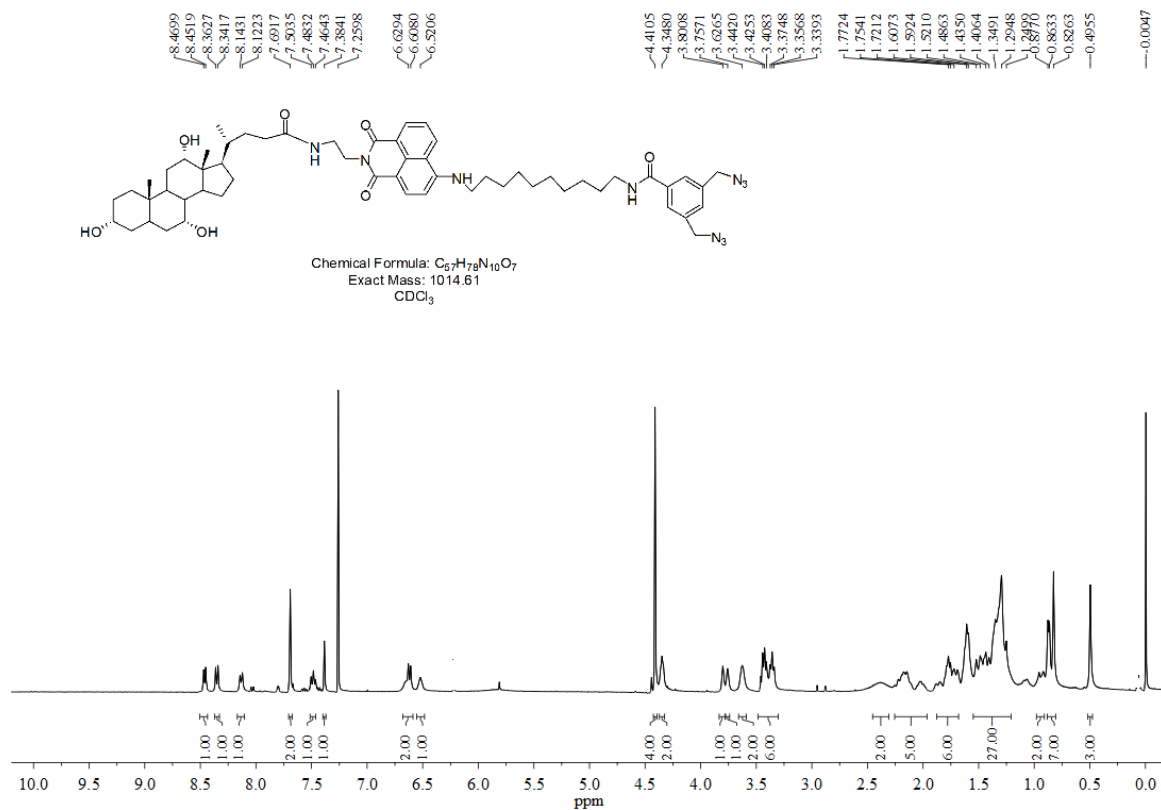
2. Spectra

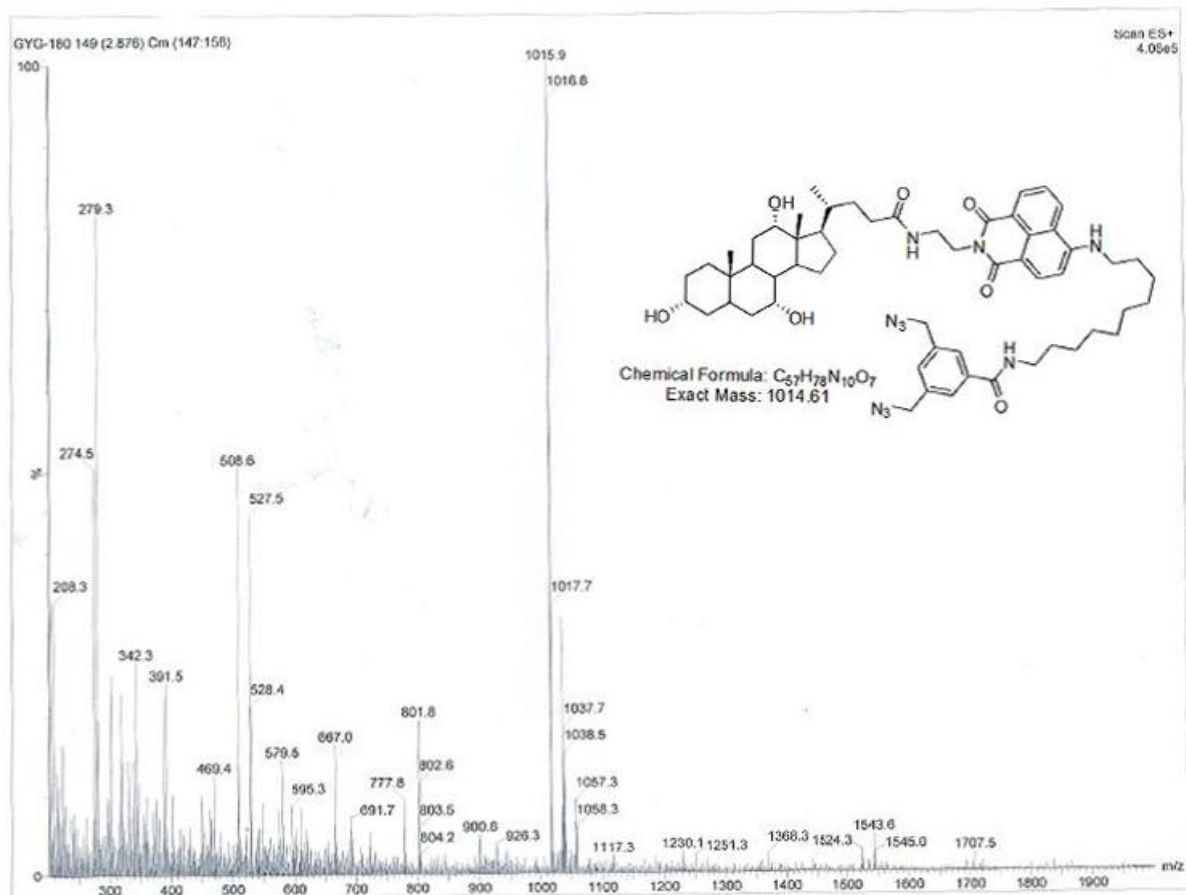
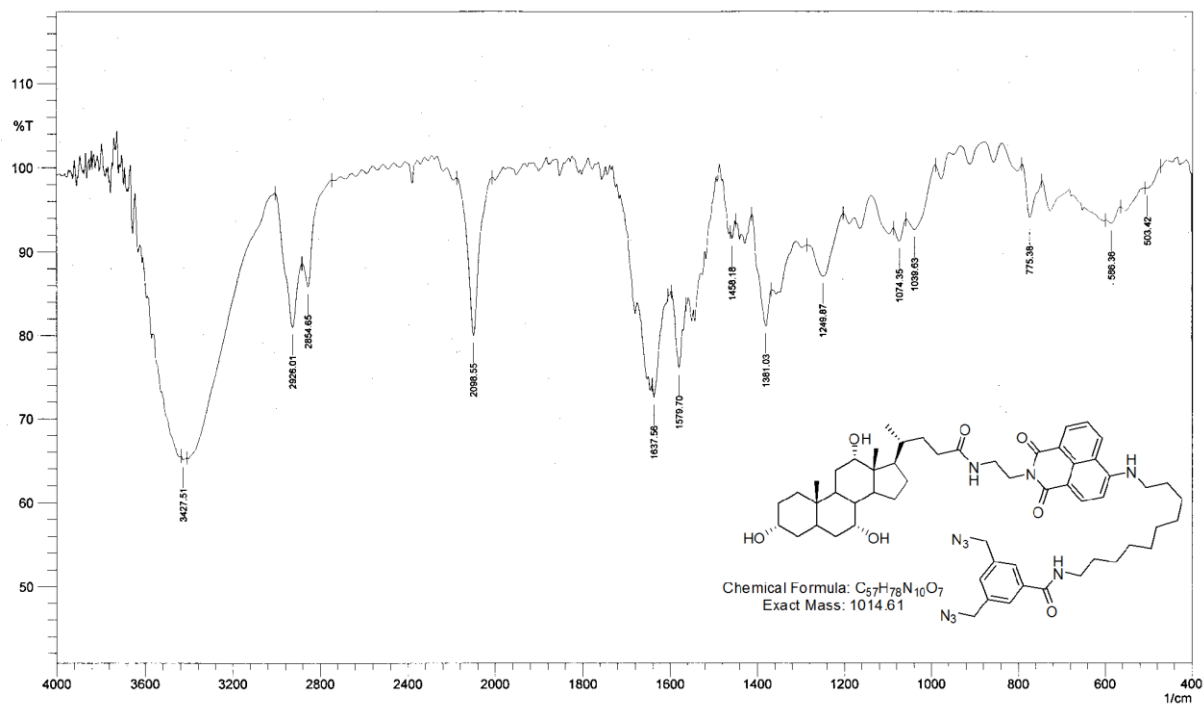


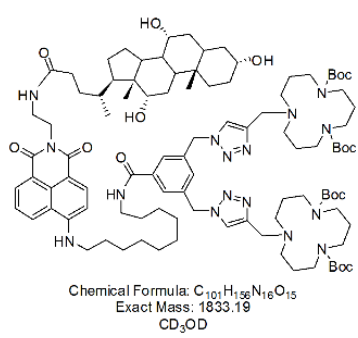
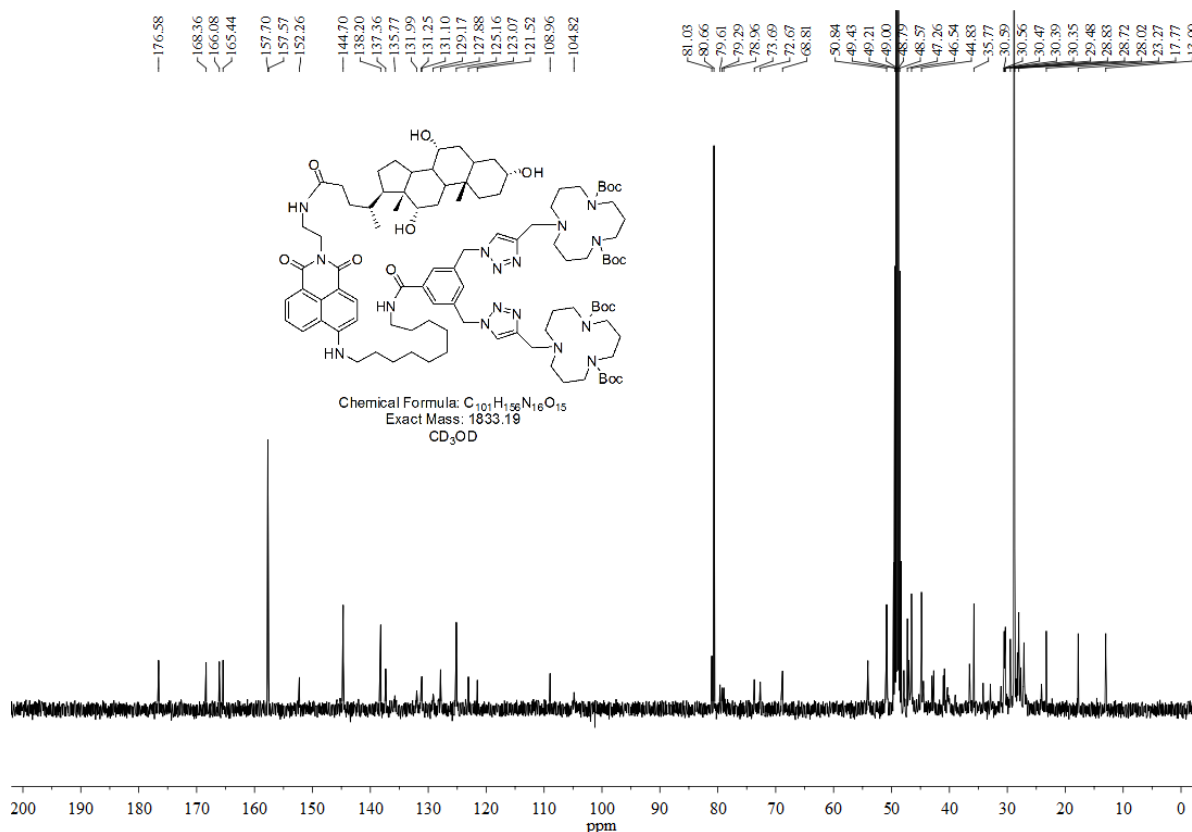
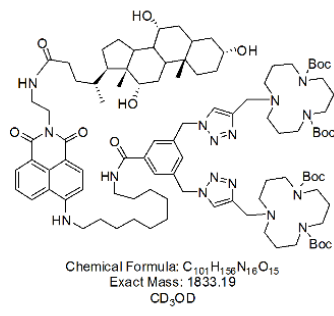
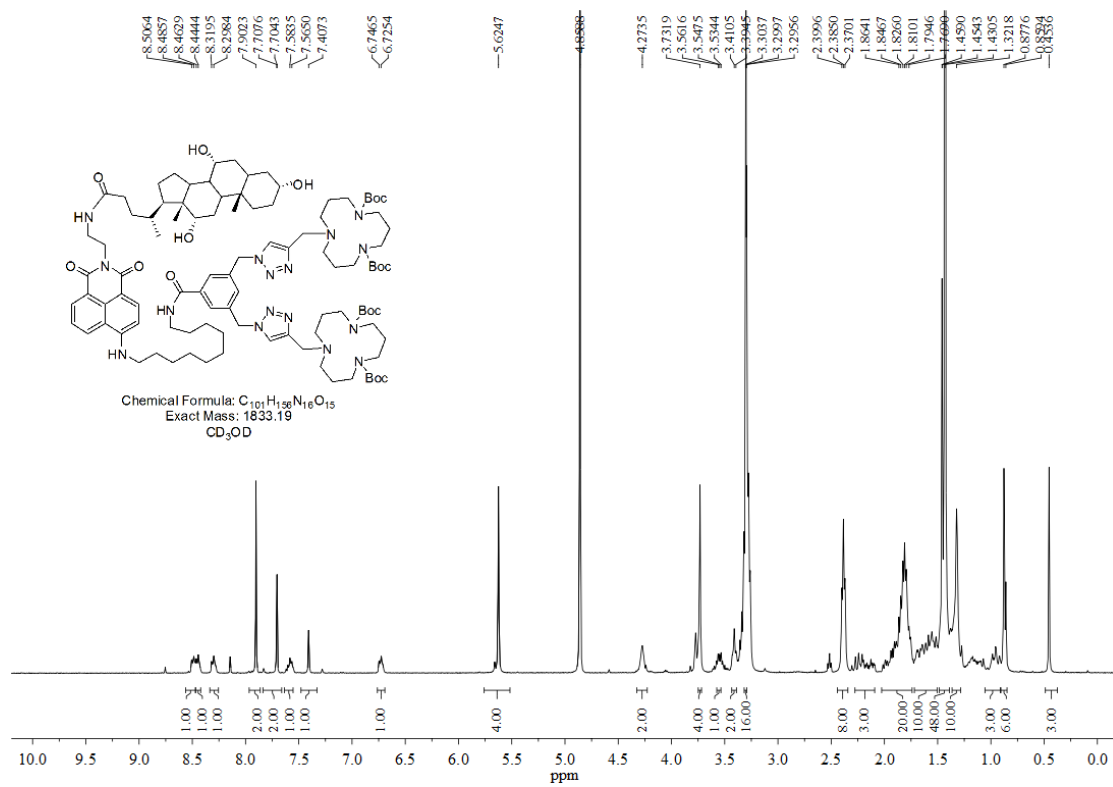


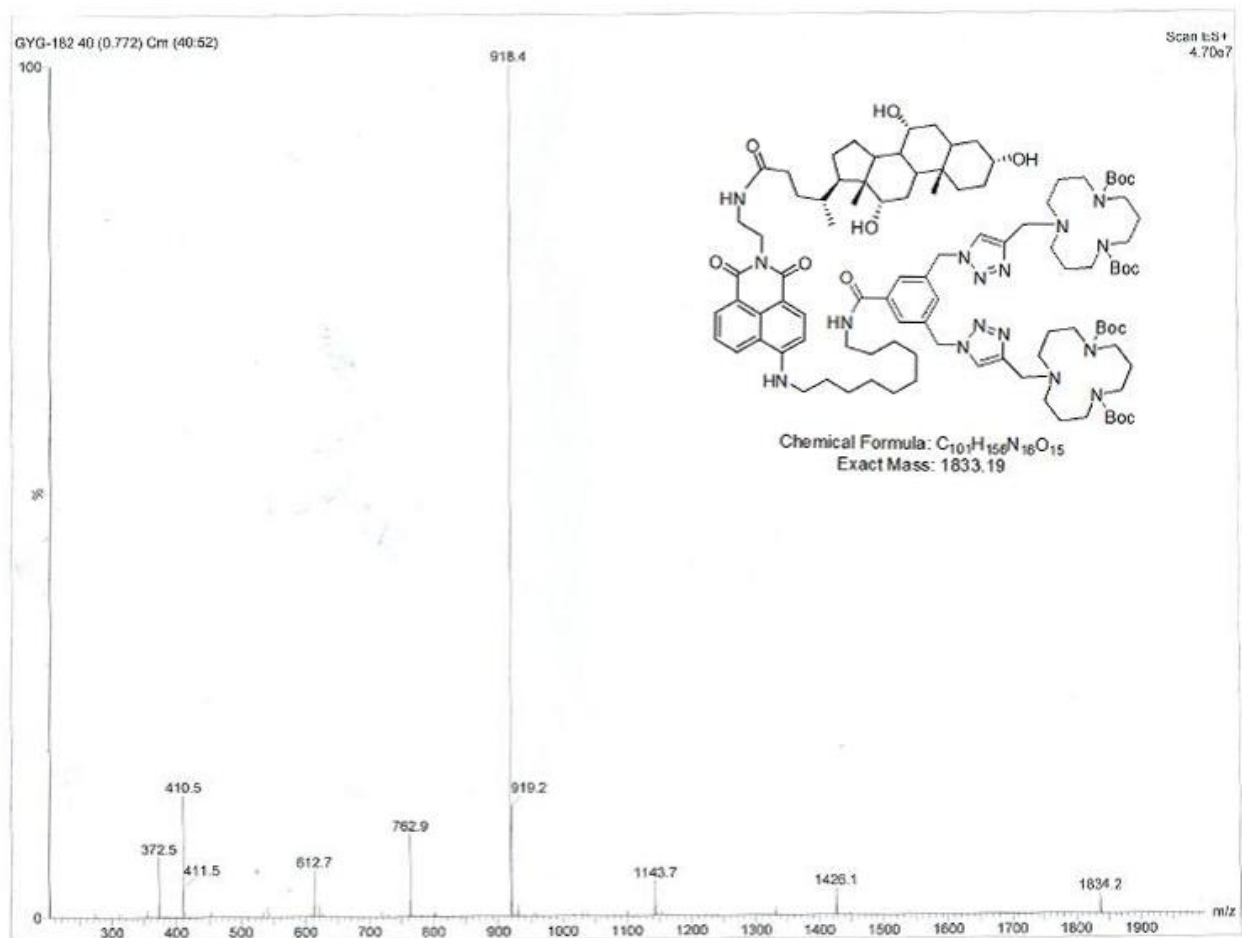
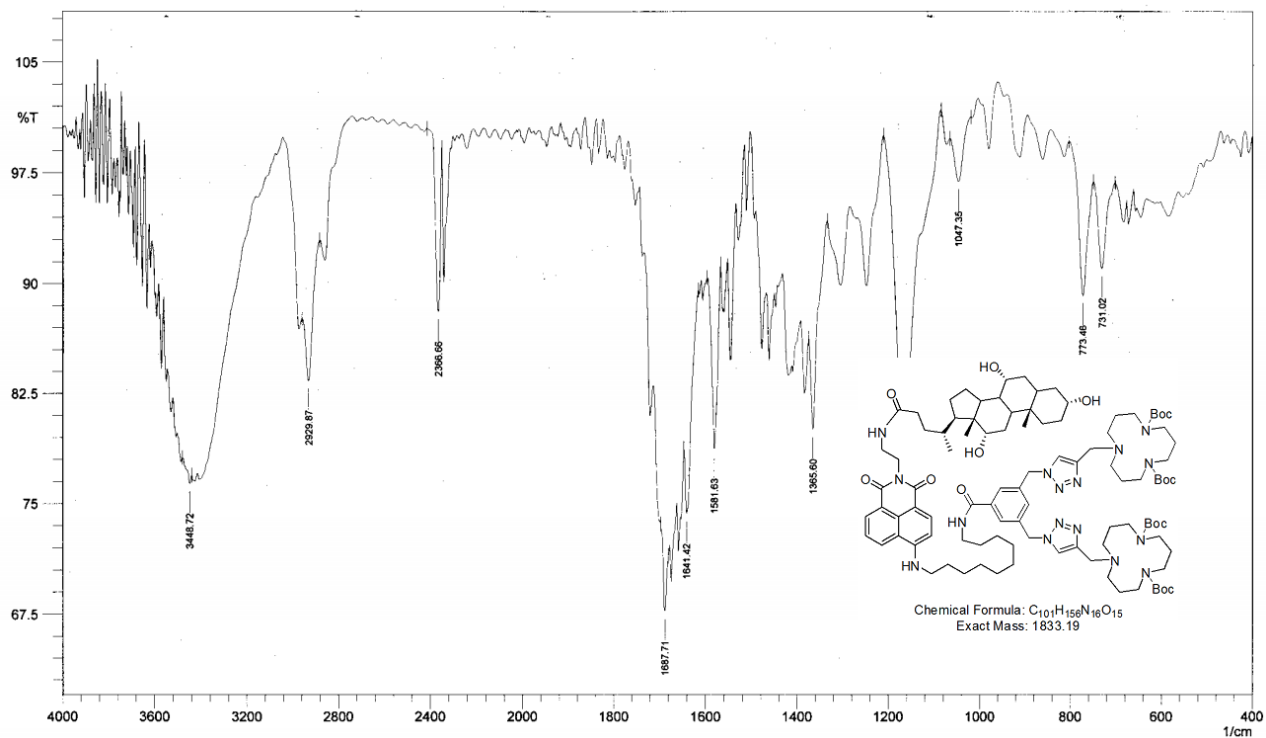


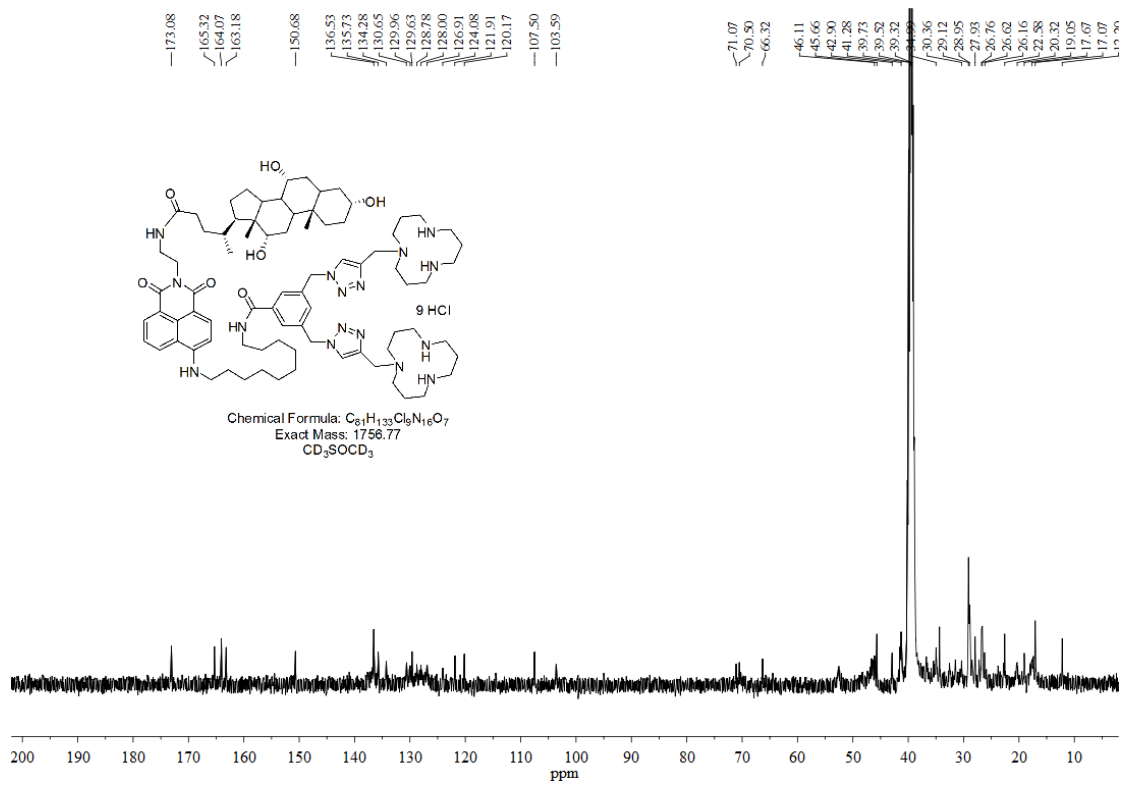
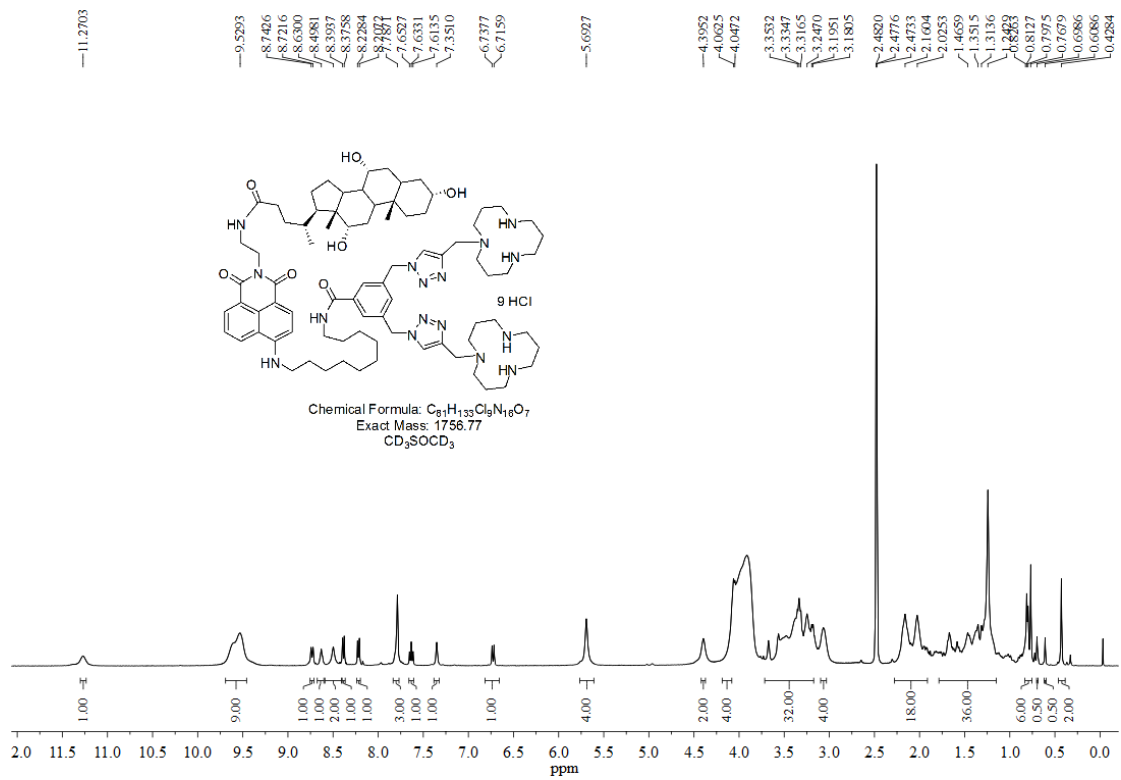


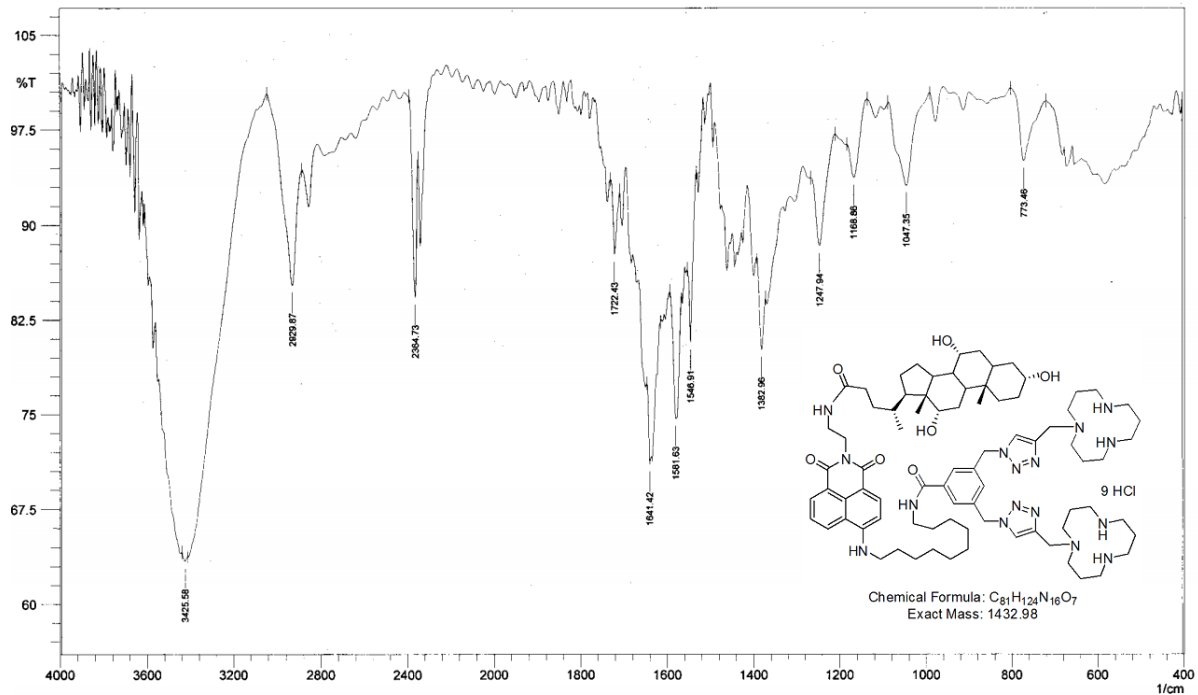












Elemental Composition Report

Single Mass Analysis

Tolerance = 5.0 PPM / DBE: min = -1.5, max = 100.0

Element prediction: Off

Number of isotope peaks used for i-FIT = 2

Monoisotopic Mass, Even Electron Ions

1751 formula(e) evaluated with 16 results within limits (up to 100 closest results for each mass)

Elements Used:

C: 0-100 H: 0-130 N: 0-20 O: 0-10

GYG-184.2 (0.034)

TOF MS ES+



Minimum:

Maximum: 5.0 5.0 -1.5

Mass	Calc. Mass	mDa	PPM	DBE	i-FIT	Formula
1433.9930	1433.9931	-0.1	-0.1	32.5	195.6	C82 H121 N20 O3
	1433.9926	0.4	0.3	39.5	69.2	C97 H125 N8 O2
	1433.9917	1.3	0.9	27.5	229.5	C81 H125 N16 O7
	1433.9944	-1.4	-1.0	26.5	196.2	C85 H129 N10 O9
	1433.9912	1.8	1.3	34.5	87.3	C96 H129 N4 O6
	1433.9957	-2.7	-1.9	31.5	166.6	C86 H125 N14 O5
	1433.9899	3.1	2.2	40.5	86.8	C93 H121 N14
	1433.9891	3.9	2.7	98.5	124.6	C91 N13 O10
	1433.9971	-4.1	-2.9	36.5	139.4	C87 H121 N18 O
	1433.9885	4.5	3.1	35.5	107.8	C92 H125 N10 O4
	1433.9877	5.3	3.7	23.5	307.0	C76 H125 N18 O9
	1433.9984	-5.4	-3.8	30.5	140.7	C90 H129 N8 O7
	1433.9872	5.8	4.0	30.5	131.8	C91 H129 N6 O8
	1433.9989	-5.9	-4.1	23.5	318.9	C75 H125 N20 O8
	1433.9998	-6.8	-4.7	35.5	117.1	C91 H125 N12 O3
	1433.9858	7.2	5.0	36.5	131.5	C88 H121 N16 O2