

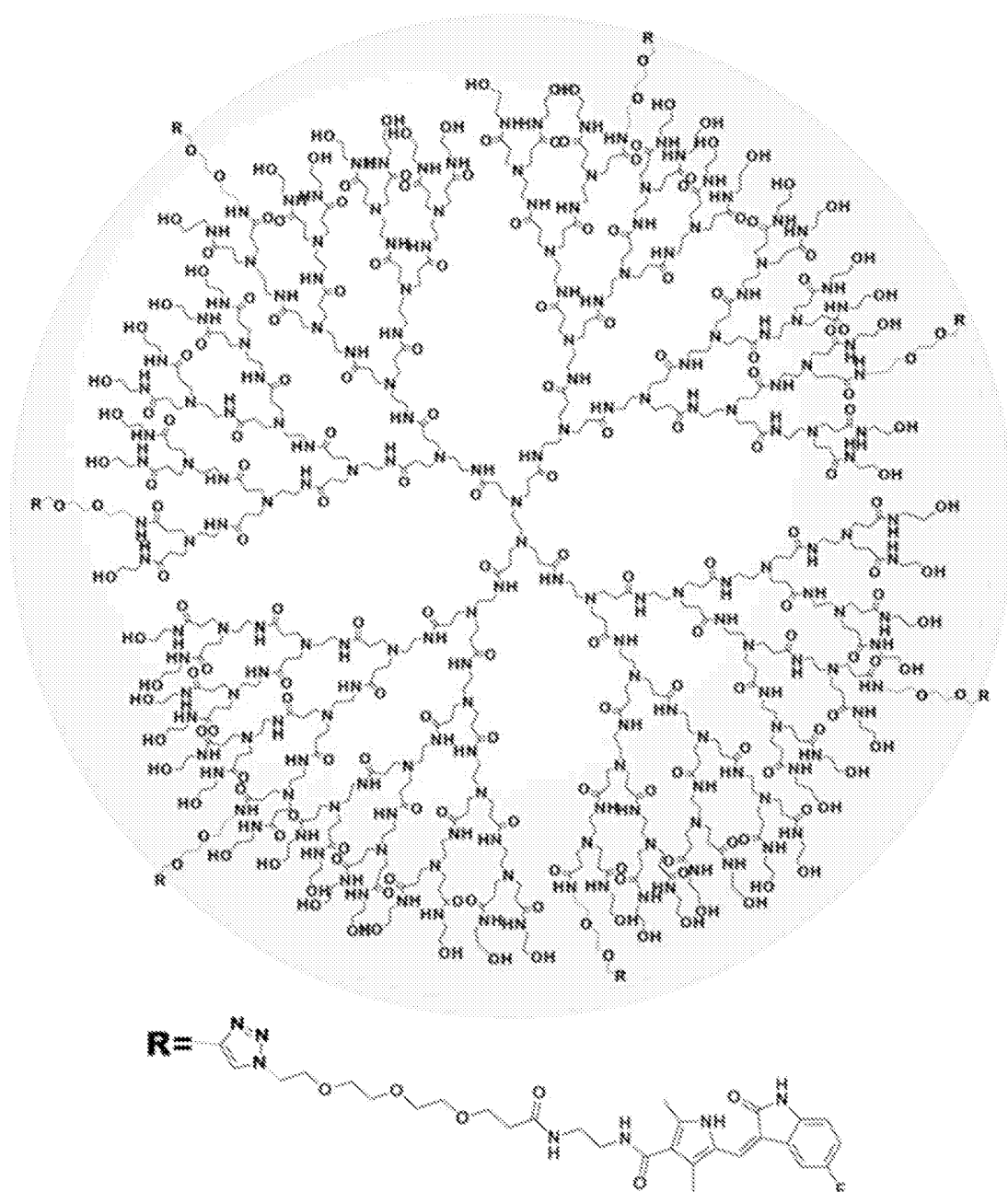


FIG. 1

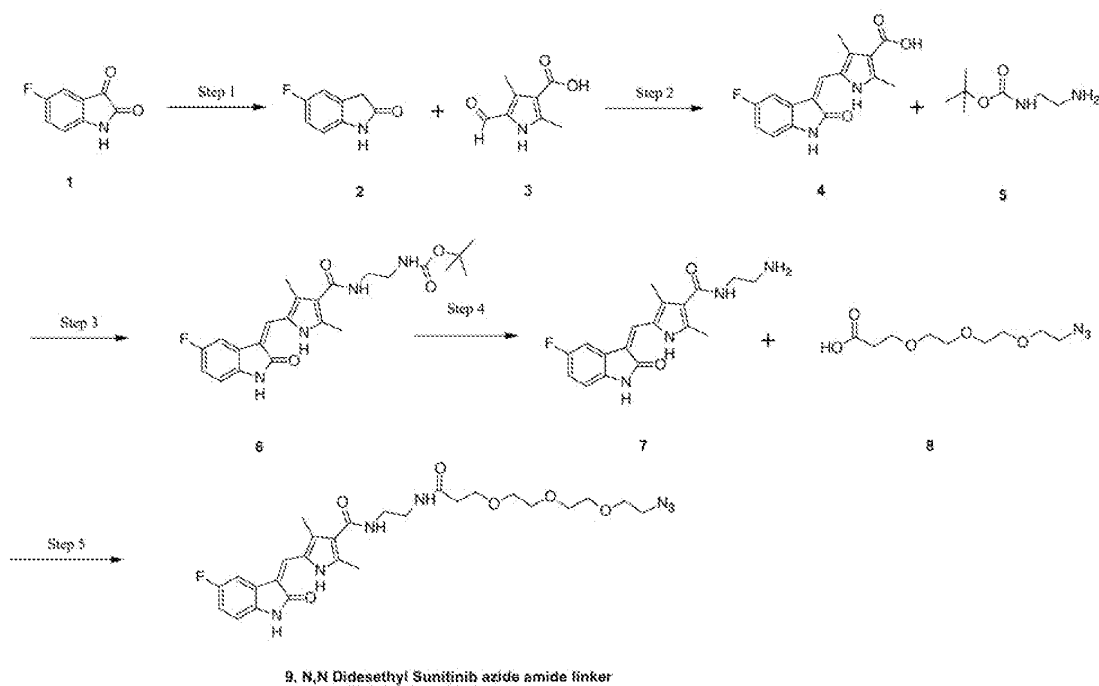


FIG. 2

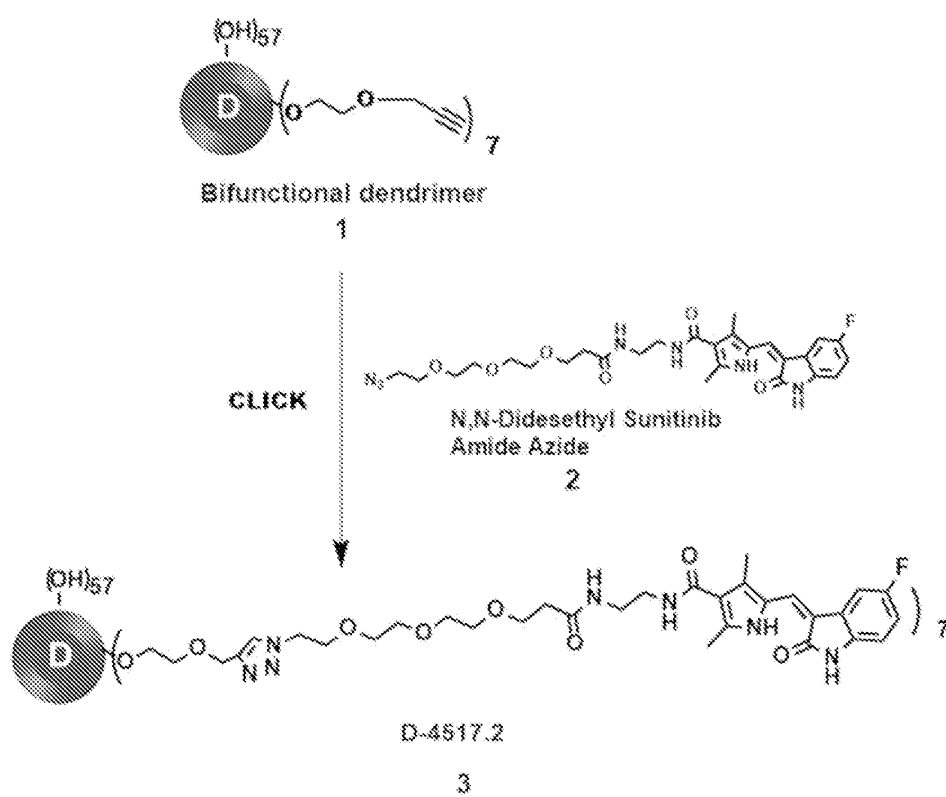


FIG. 3

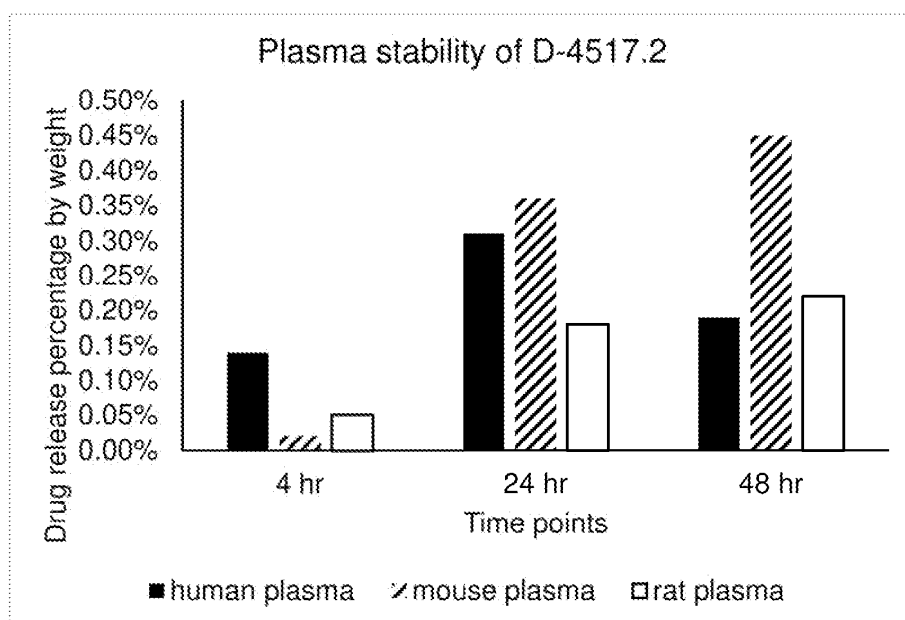


FIG. 4

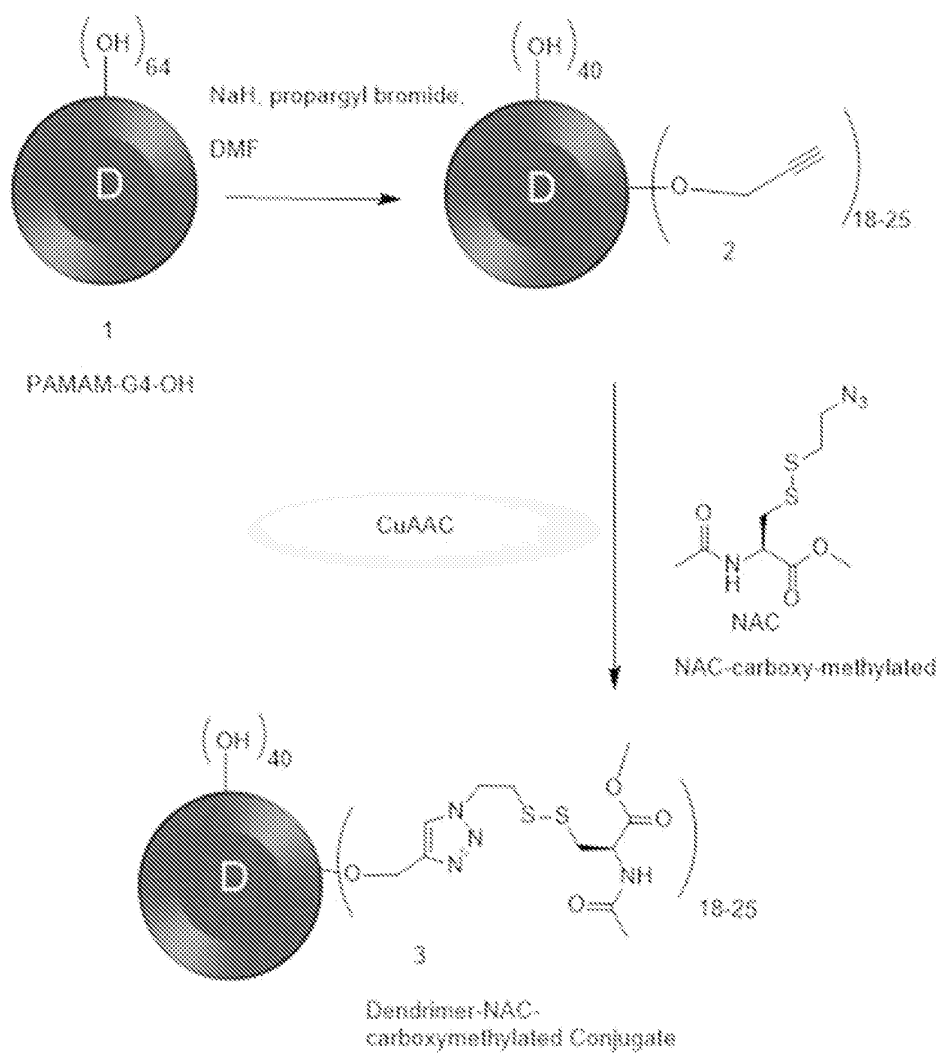


FIG. 5

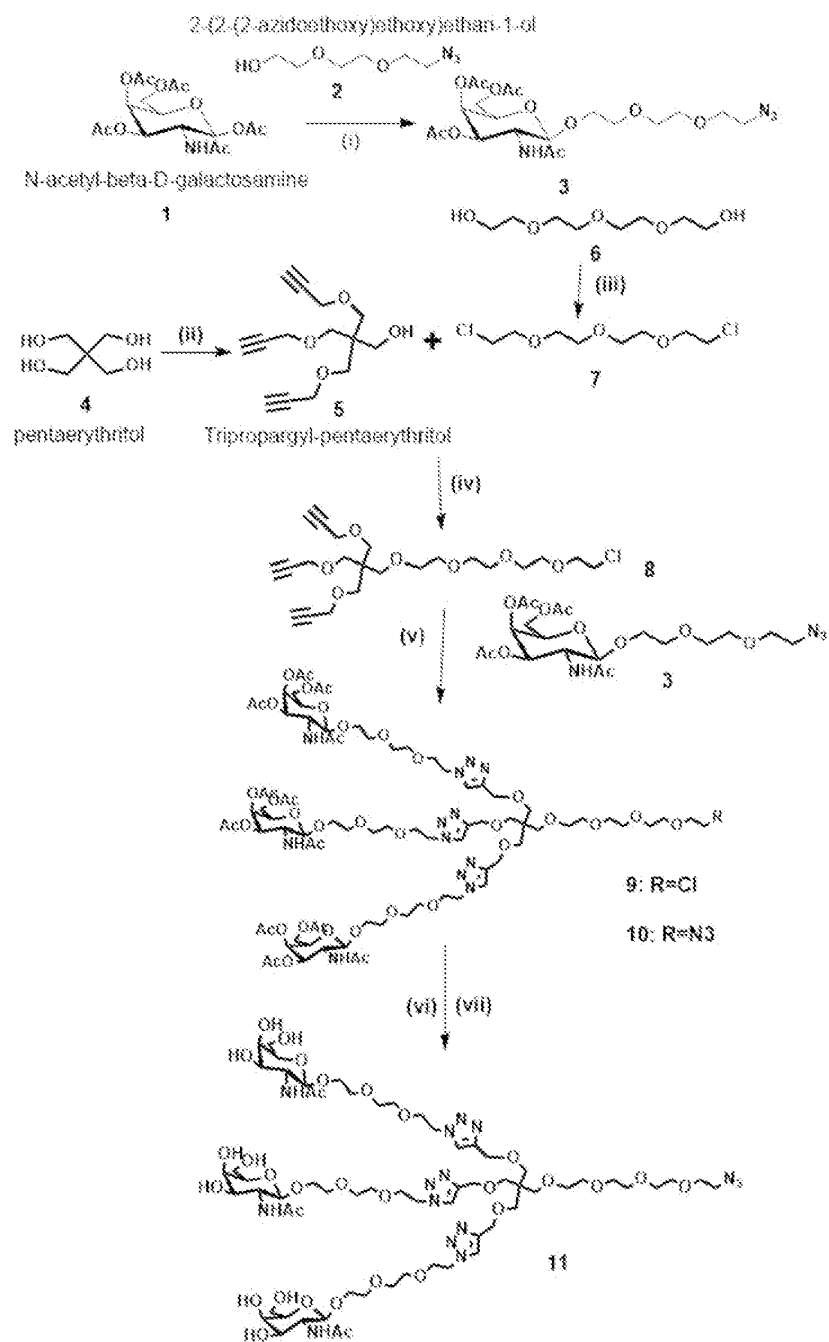


FIG. 6

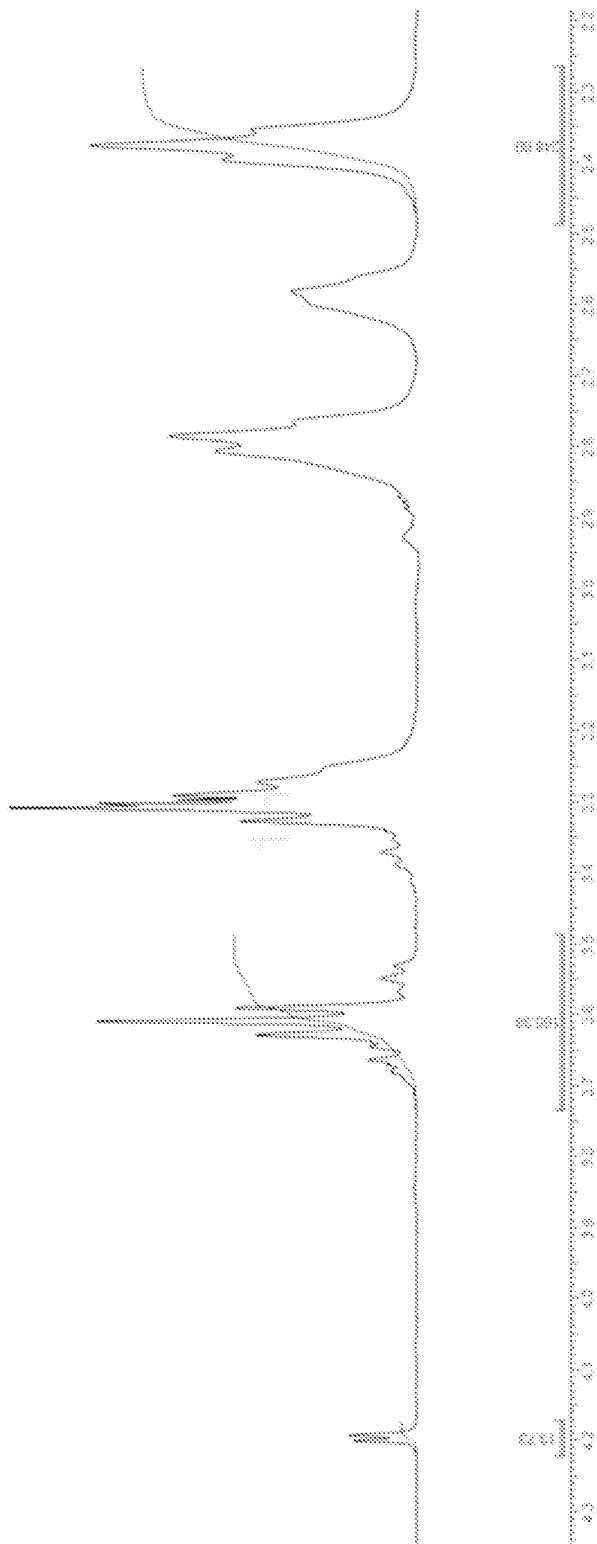


FIG. 7

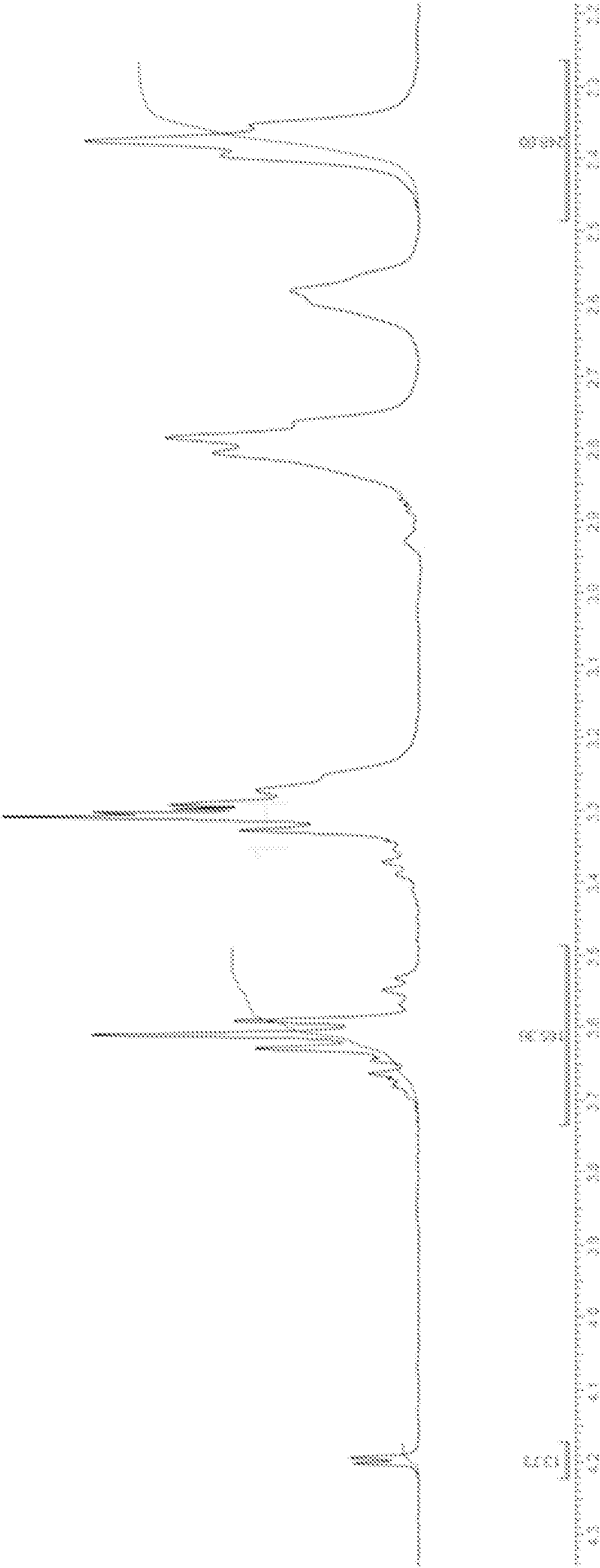


FIG. 8

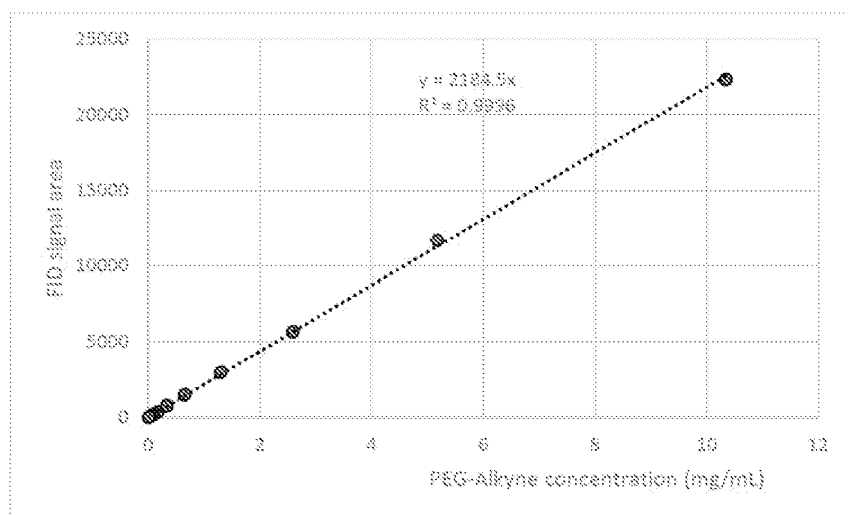
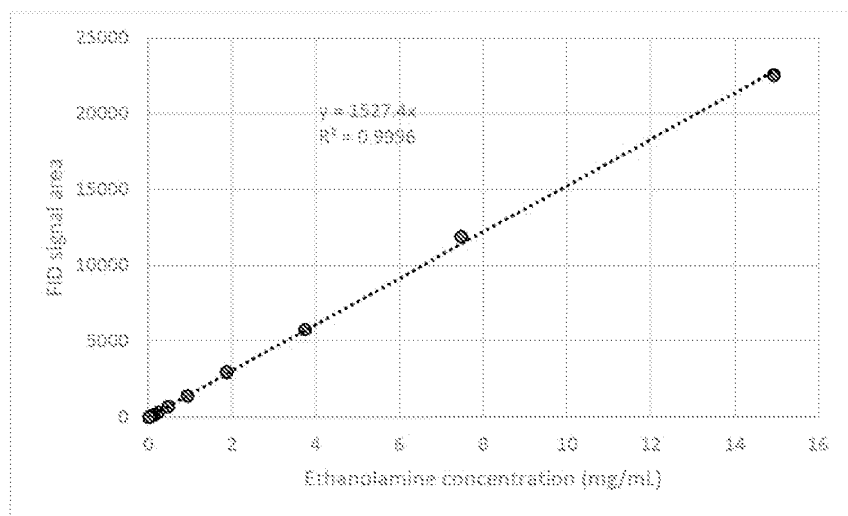


FIG. 9

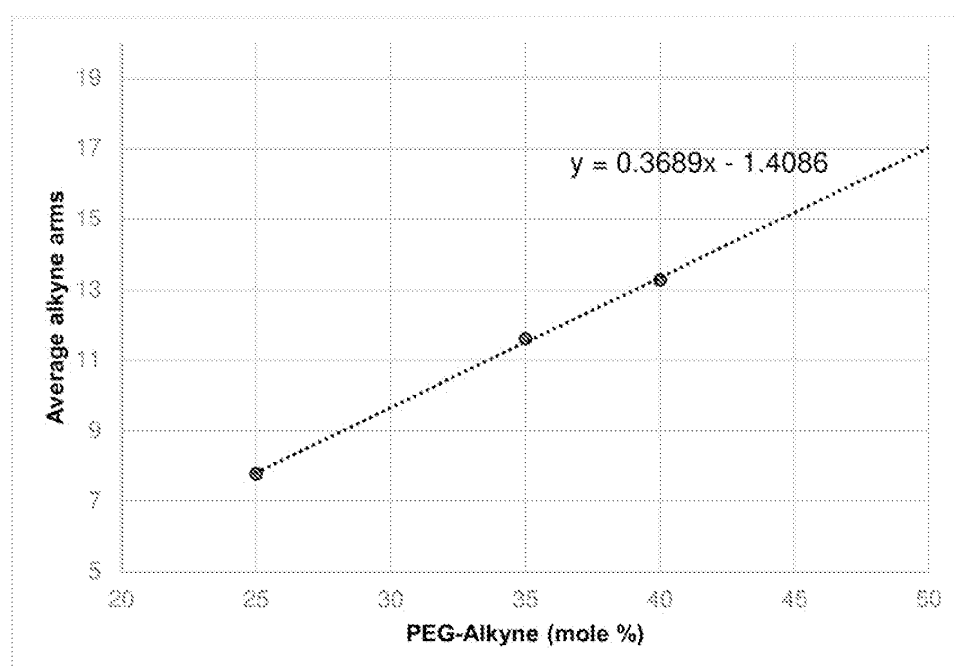


FIG. 10

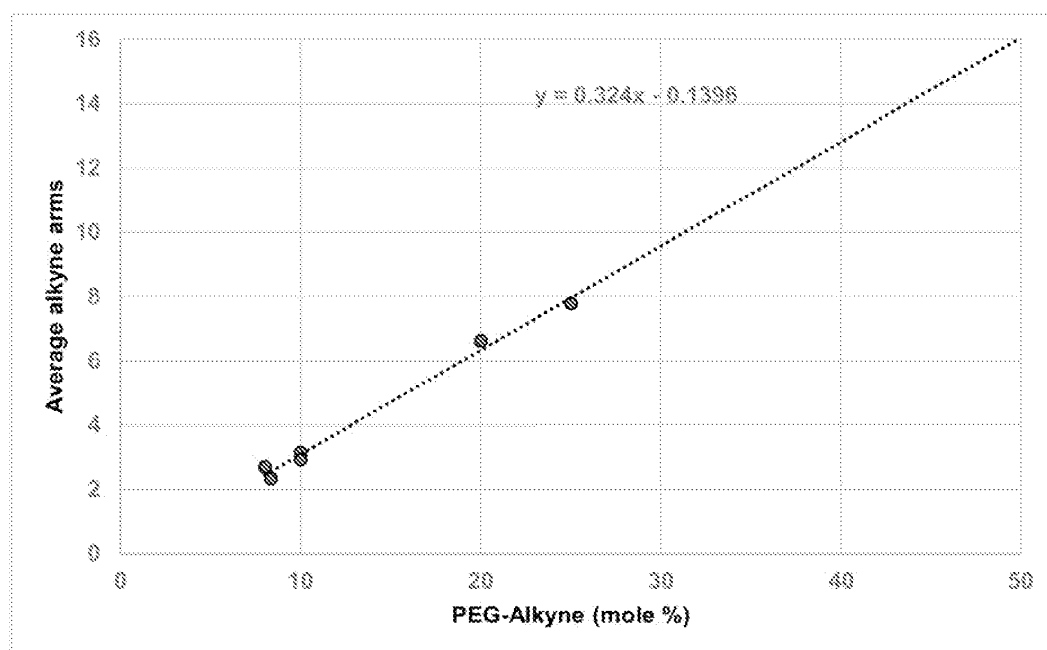


FIG. 11

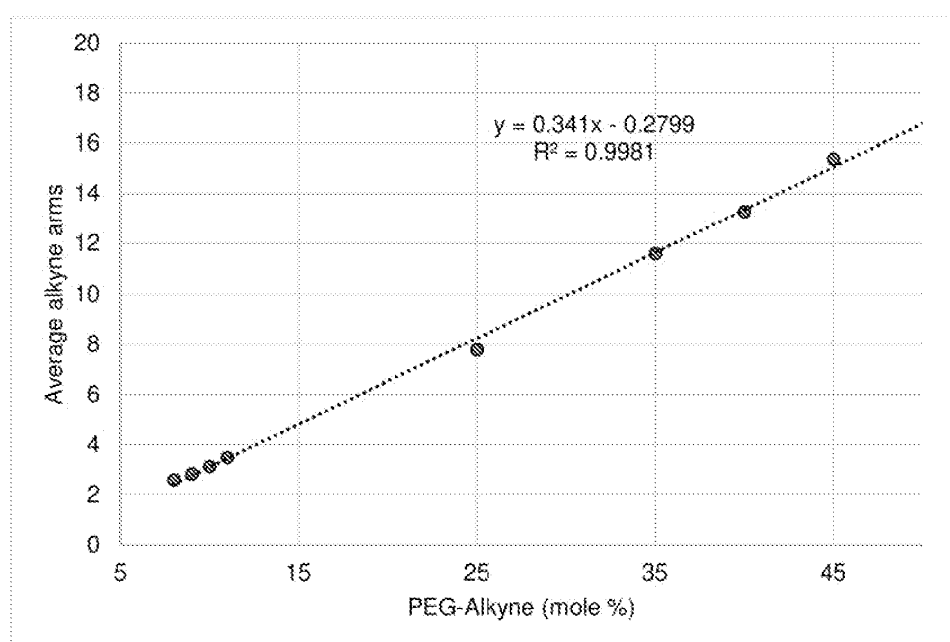


FIG. 12

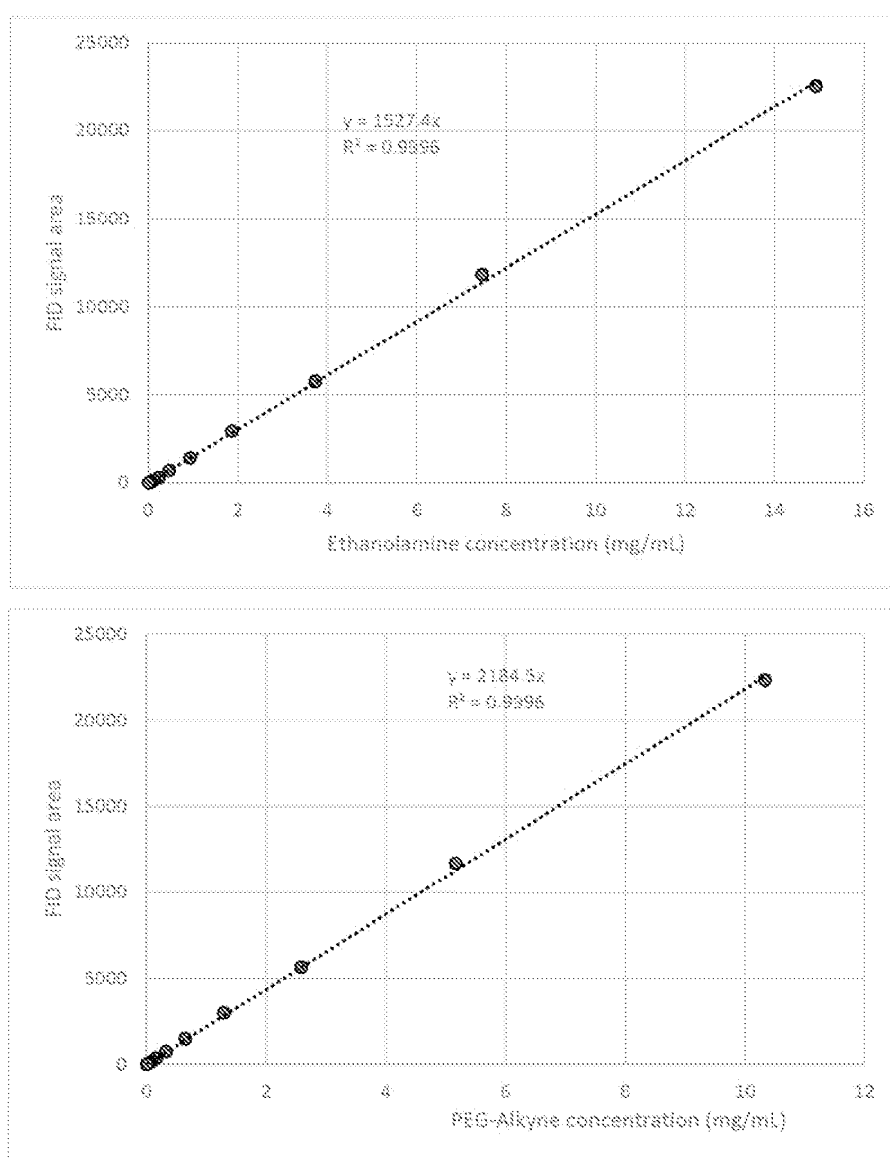


FIG. 13

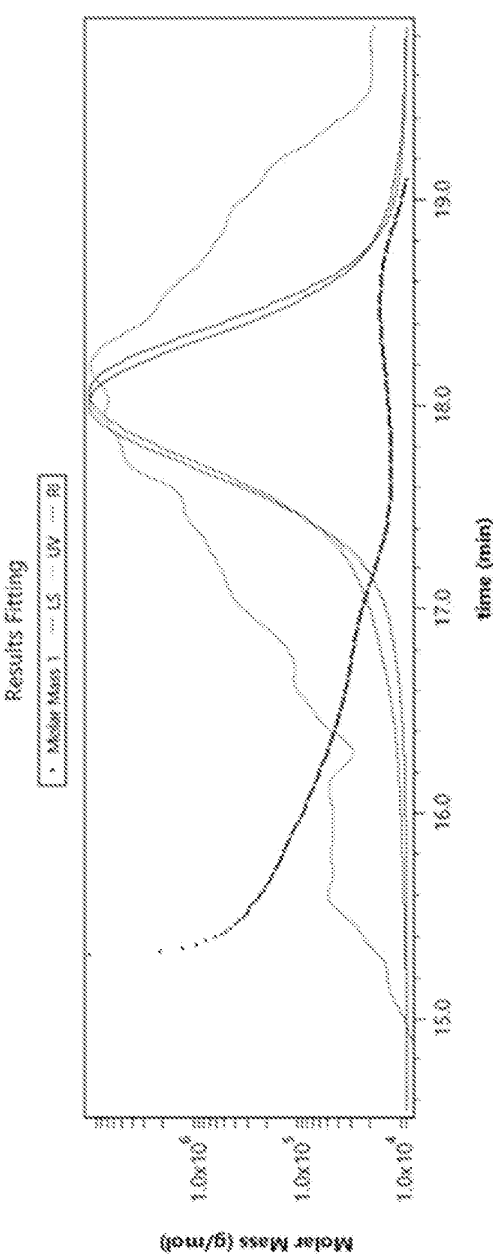
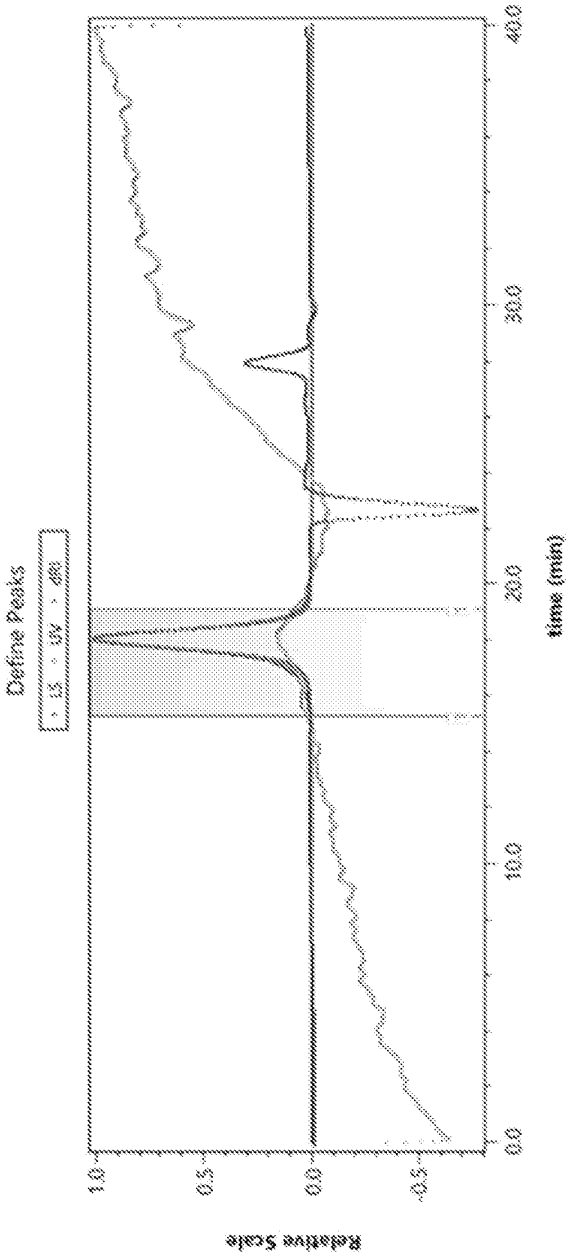


FIG. 14A

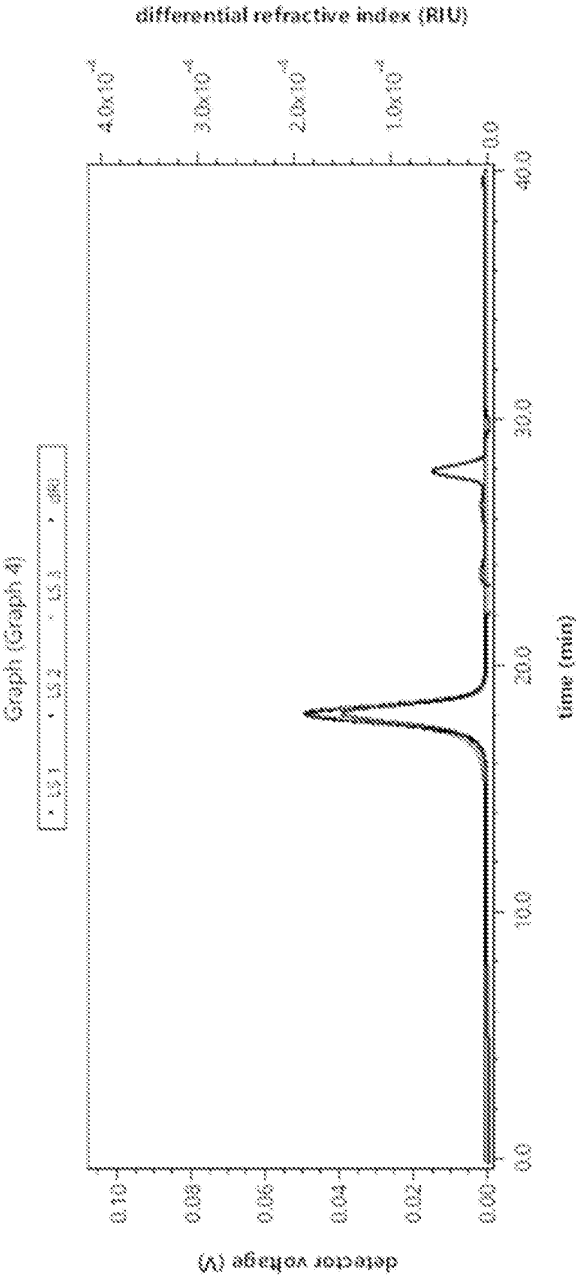


FIG. 14B

Configuration			
Flow Rate: 1.000 mL/min			
Light Scattering Instrument:			
Physical Instrument Name: miniDAOS			
RI Instrument:			
Physical Instrument Name: OptiLab			
UV Instrument:			
Channel	Wavelength (nm)	Response Factor (AUV)	
1	220.0	1.000	
2	280	1.000	
3	340	1.000	
4	400	1.000	
Column:			
Description:			
Conventional Calibration Function: $RIU = 10^{*}(11.9862978 * 0.000786402 * 0.0007619910^{*})$			
Solvent: citric acid aqueous			
Description: 0.1M Citric acid buffer, pH2.24			
Processing			
Peak settings:			
Peak Units (min)		15.264 ± 0.002	
Height (a.u.)		0.1000	
Results			
Peak Results		Peak 1	
Masses			
Injected Mass (µg)		700.00	
Calculated Mass (µg)		832.86	
Molar mass moments [g/mol]			
Mn	1.542×10 ⁶ (±0.022%)		
Mp	1.722×10 ⁶ (±0.017%)		
Mw	1.894×10 ⁶ (±0.036%)		
M(z)	1.925×10 ⁶ (±0.003%)		
Polydispersity		Peak 1	
Mw/Mn	1.200 (±0.044%)		

FIG. 14C

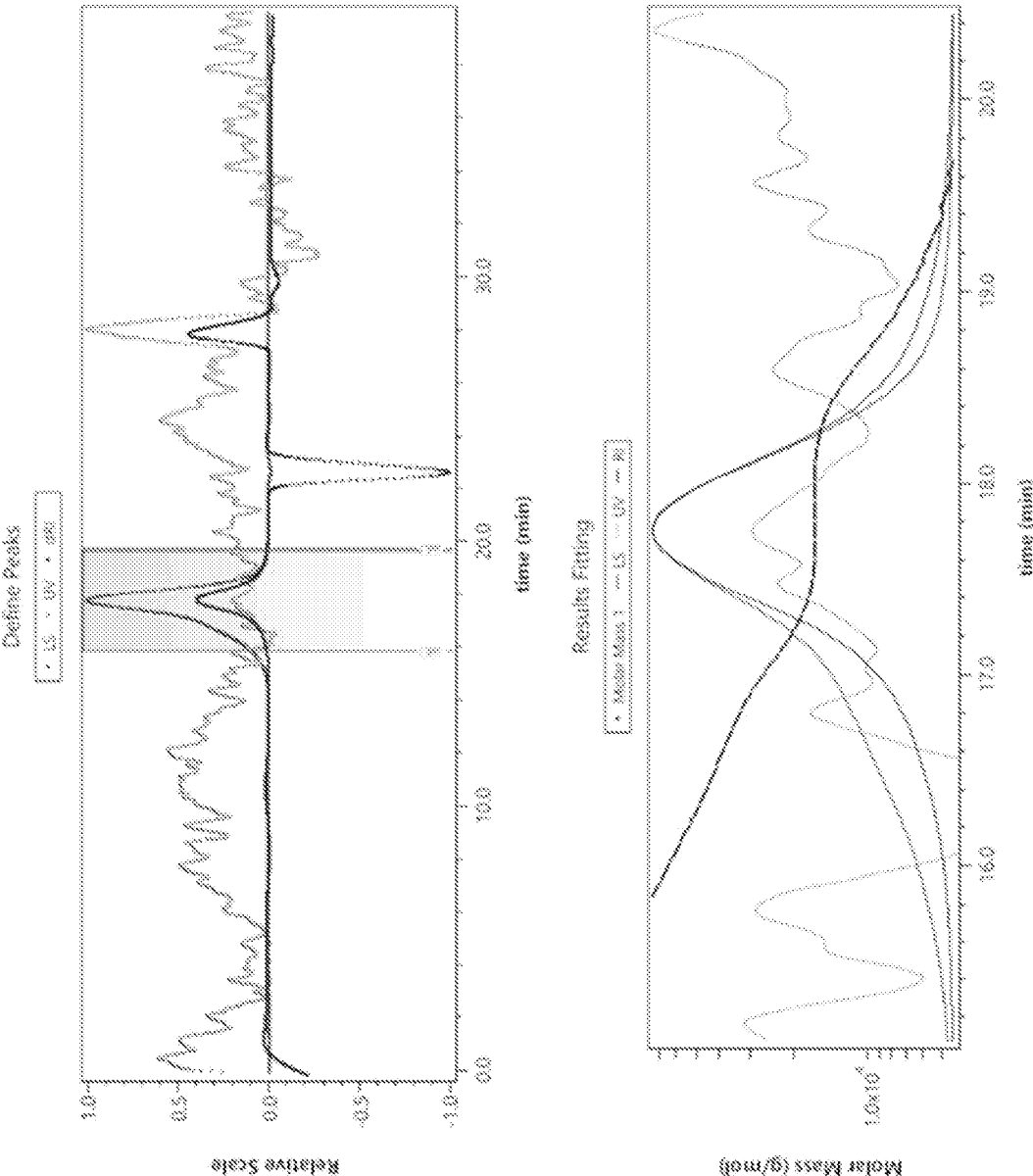


FIG. 15A

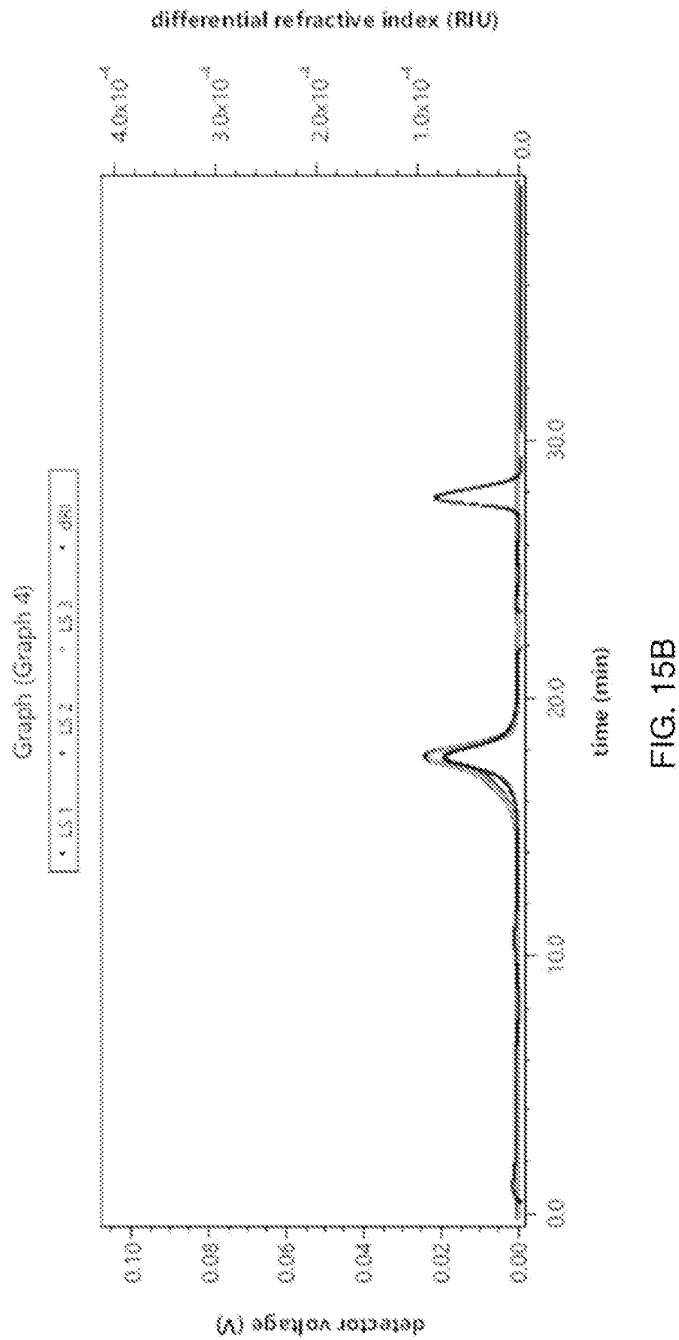


FIG. 15B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: mni03001	
RI Instrument:	
Physical Instrument Name: QP1140	
UV Instrument:	
Channel Wavelength (nm) Response Factor (AUM)	
1 220.0 1.000	
2 260 1.000	
3 280 1.000	
4 300 1.000	
Column:	
Description:	
Conventional Calibration Function: $W(\%) = 10^7 (11.6041276 - 0.424796489 \times 0.00076116627)$	
Solvent: acetic acid aqueous	
Description: 0.1M Citric acid buffer, pH 2.74	
Processing	
Peak settings:	
Peak Limits (min): 15.000 - 18.000	
divide (nd,lg) 0.0001	
Results	
Peak Results	
Peak 1	
Masses	
Injected Mass (ng) 700.00	
Calculated Mass (ng) 420.88	
Molar mass moments (g/mol)	
Mn	1.554×10^4 (40.0288)
Mp	1.623×10^4 (40.9328)
Mw	1.819×10^4 (45.9388)
M(wg)	1.722×10^4 (43.6568)
Peak 1	
Polydispersity	
Mw/Mn	1.141 (40.9403)

FIG. 15C

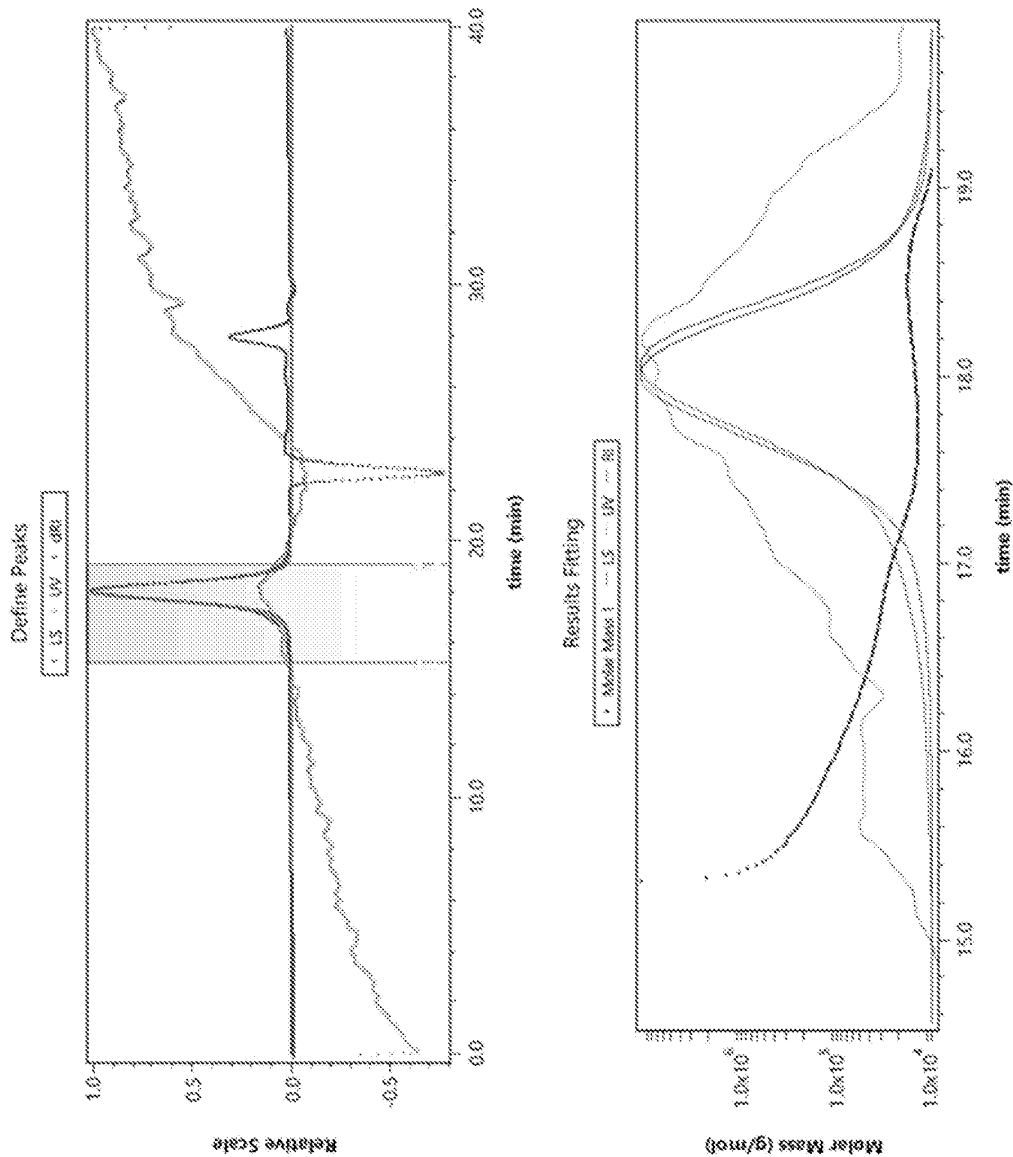


FIG. 16A

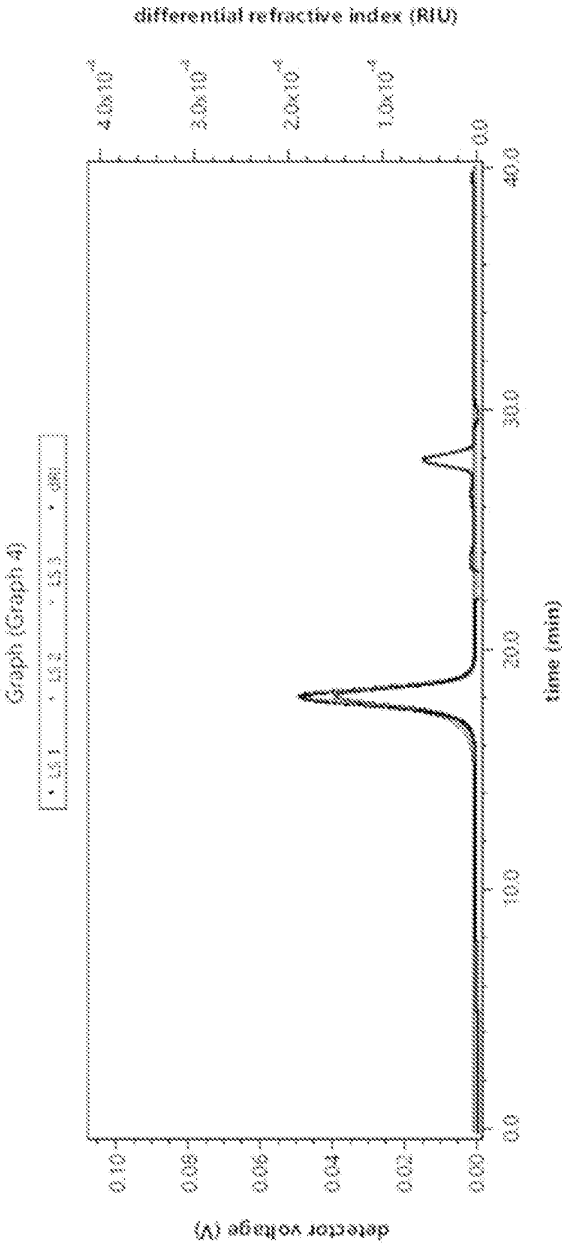
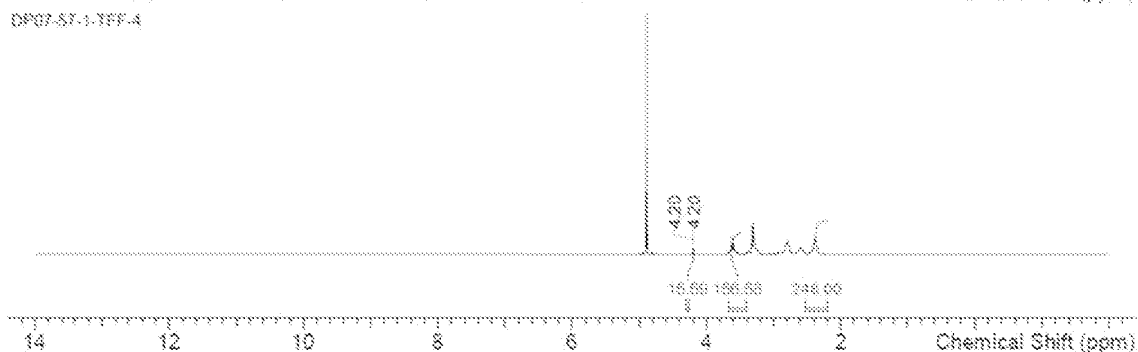
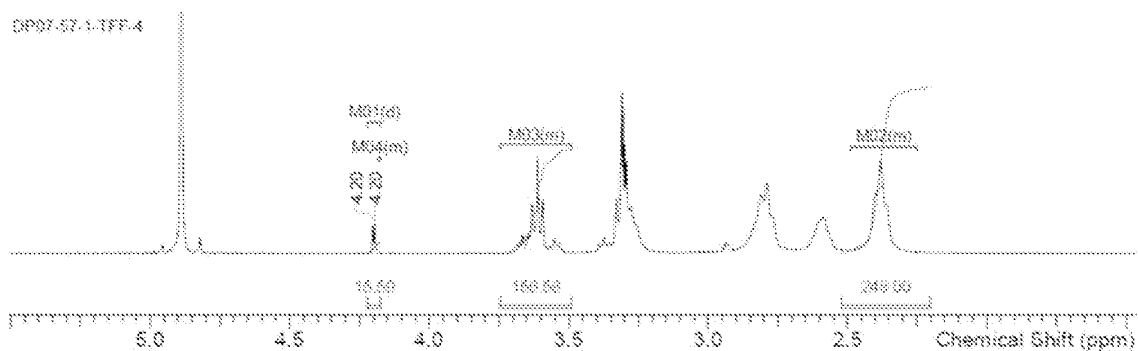


FIG. 16B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: nls10000	
RI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel	Wavelength (nm)
1*	210.0
2	0.0
3	0.0
4	0.0
Response Factor (AU/V)	
1*	1.000
2	1.000
3	1.000
4	1.000
Column:	
Description:	
Conventional Calibration Function: $S(n) = 10^{(11.9662698 + 0.000760430 \times 0.000761186 \times S(n))}$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH2.74	
Processing	
Peak settings:	
Peak Limits (min)	15.264 - 18.102
Width (min)	0.0058
Results	
Peak Results	Peak 1
Masses	
Injected Mass (µg)	708.00
Calculated Mass (µg)	812.85
Molar mass moments (g/mol)	
Mn	1.340×10^4 (40.0078)
Mp	1.330×10^4 (40.0176)
Mw	1.361×10^4 (40.0348)
Mw/Mn	1.009×10^0 (40.0026)
Polydispersity	
Mw/Mn	1.009 (40.0440)

FIG. 16C

Acquisition Time (sec)	4.9999	Comment	DP07-51-1-TFF-4	54 26 2021
Date	Apr 23 2021	Date Stamp	Apr 23 2021	17:15:00
File Name	\\192.168.7.14\mri\perera\DP07-51-1-TFF-4_20210423_DP07-51-1-TFF-4_20210423_01\PROTON_02.fid.fid			DP07-51-1-TFF-4
Frequency (MHz)	299.9009	Nucleus	¹ H	
Number of Transients	32	Original Points Count	23959	
Points Count	32759	Pulse Sequence	sg2pul	
Receiver Gain	16.00	SW(cyclical) (Hz)	4793.85	
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197	
Spectrum Type	standard	Sweep Width (Hz)	4793.72	
Temperature (degree C)	40.000			



No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[2.20 - 2.52]	248.000	1.023e+0	248.000
2	[3.49 - 3.75]	150.576	1.214e+0	150.576
3	[4.17 - 4.22]	15.585	1.208e+0	15.585

No.	(ppm)	(Hz)	Height
1	4.20	1258.1	0.0247
2	4.20	1290.6	0.0244

FIG. 17

Acquisition Time (sec)	4.9999	Comment	DP07-51-2-TFF-2
Date	Apr 26 2021	Date Stamp	Apr 26 2021
File Name	V192.168.7.14\mr\peradex\DP07-51-2-TFF-2_20210426_DP07-51-2-TFF-2_20210426_01\PROTON_52.5d.fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23869
Points Count	32755	Pulse Sequence	s2pul
Receiver Gain	30.00	SW(cyclical) (Hz)	4793.65
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

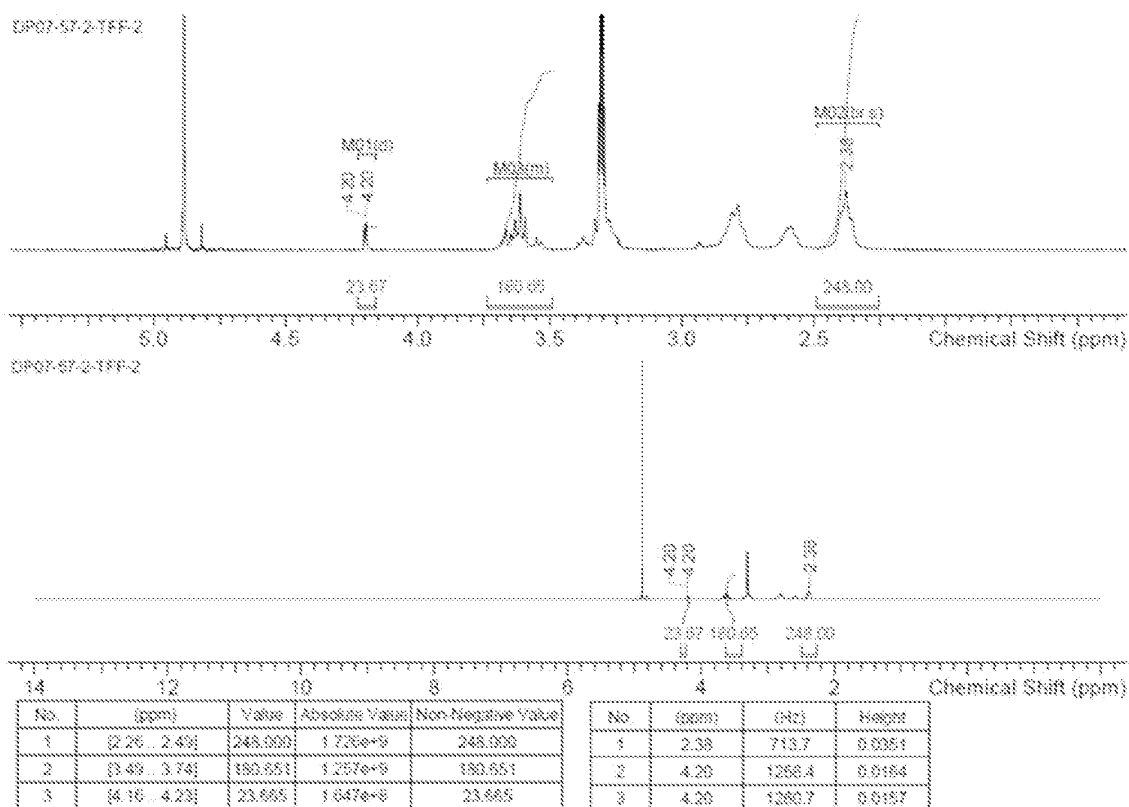


FIG. 18

Acquisition Time (sec)	4.9999	Comment	DP07-57-3-TFF-1
Date	Apr 26 2021	Date Stamp	Apr 26 2021
File Name	\192.168.7.14\nmr\pers\adad\DP07-57-3-TFF-1_20210426_DP07-57-3-TFF-1_20210426_01\PROTON_02.fid\fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	s2pul
Receiver Gain	22.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

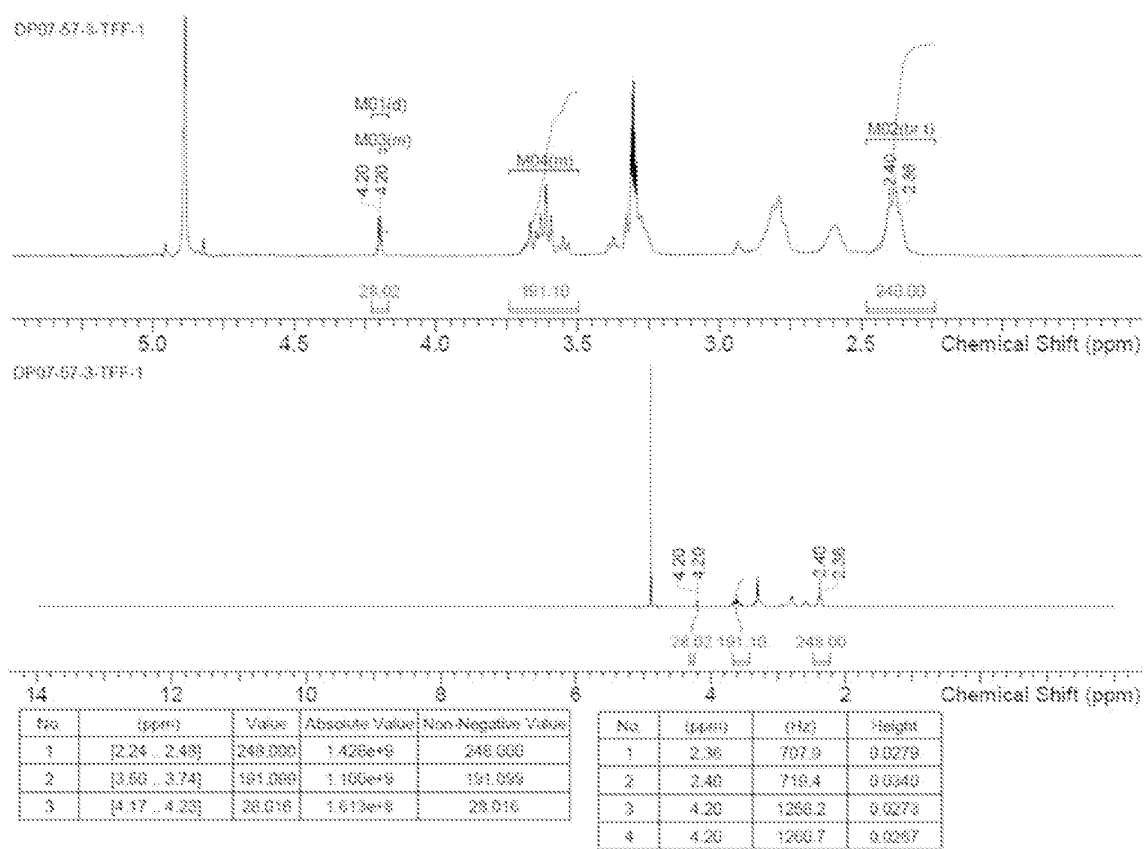
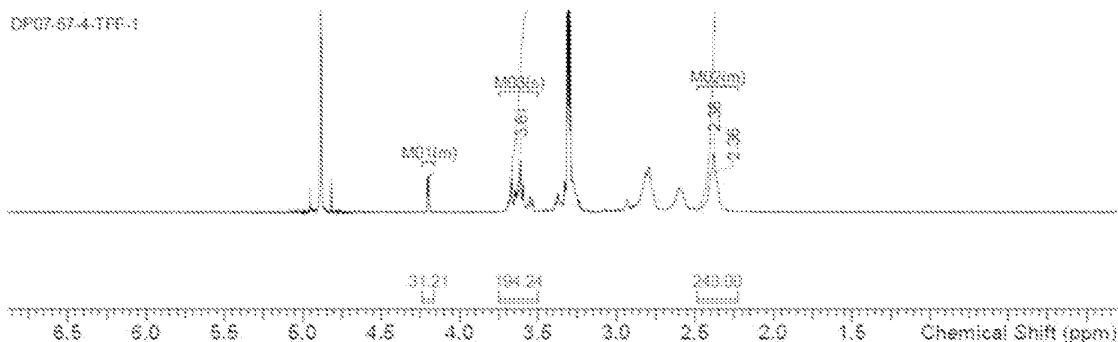


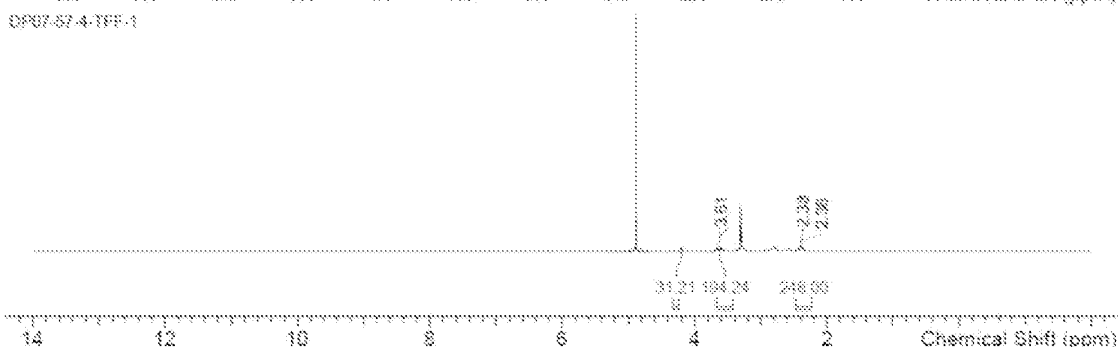
FIG. 19

Acquisition Time (sec)	4.9999	Comment	DP07-57-4-TFF-1
Date	Apr 27 2021	Date Stamp	Apr 27 2021
File Name	\\192.168.7.14\nmr\pererada\DP07-57-4-TFF-1_20210427_DP07-57-4-TFF-1_20210427_01\PROTON_02.fid.fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	sg2pul
Receiver Gain	30.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

DP07-57-4-TFF-1



DP07-57-4-TFF-1



No	(ppm)	Value	Absolute Value	Non-Negative Value	No	(ppm)	(Hz)	Height
1	[2.23 ... 2.40]	248.000	1.267e+0	248.000	1	2.36	797.7	0.0130
2	[3.59 ... 3.75]	194.242	1.003e+0	194.242	2	2.38	714.0	0.0242
3	[4.95 ... 4.24]	31.214	1.620e+0	31.214	3	3.61	1083.4	0.0220

FIG. 20

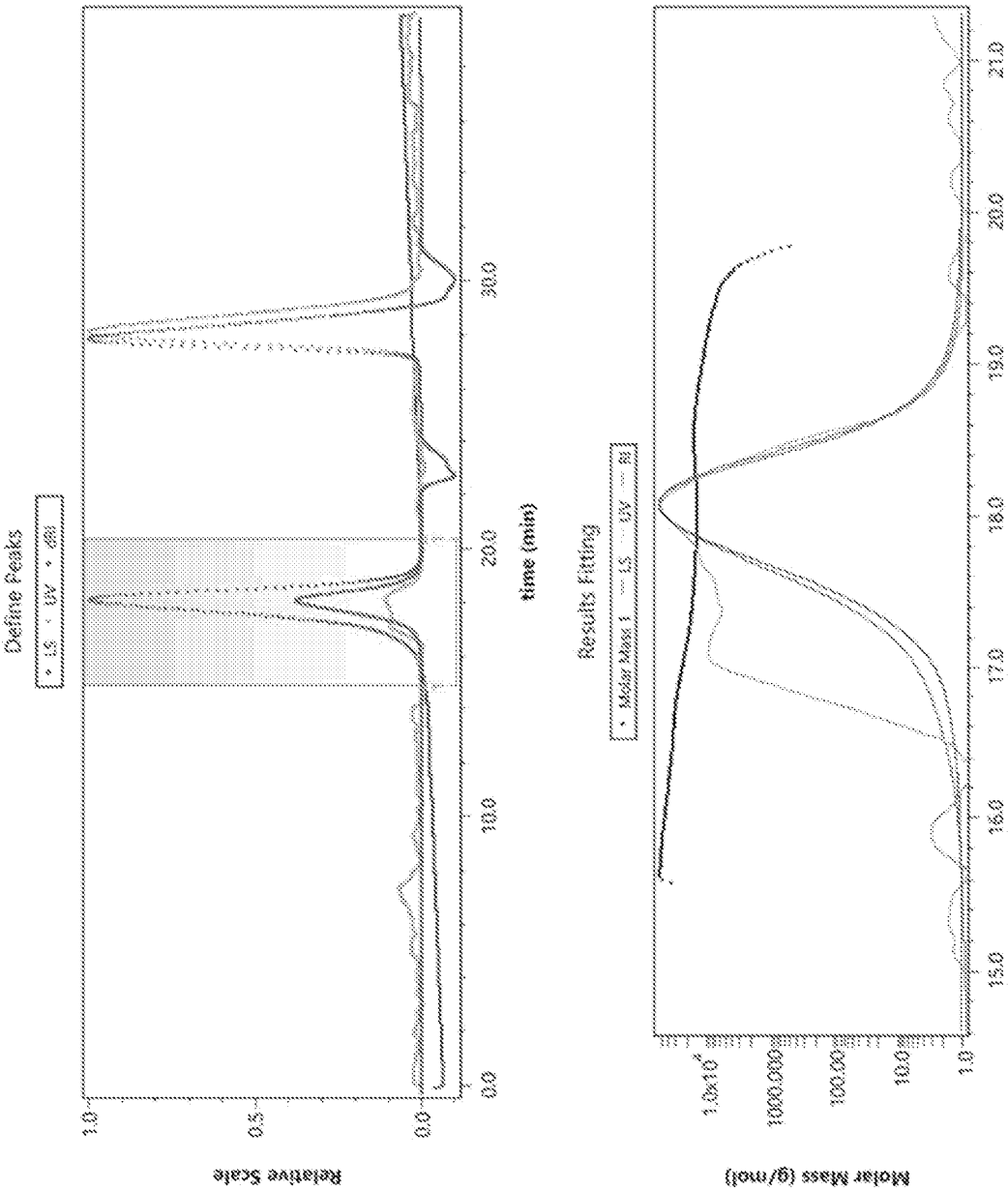


FIG. 21A

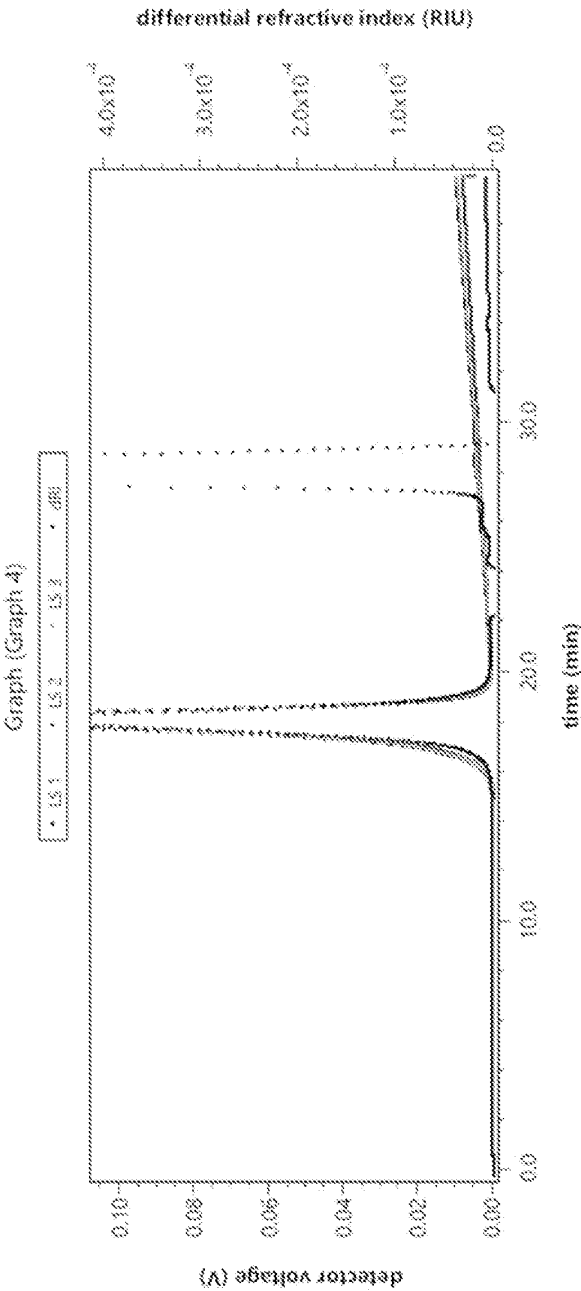


FIG. 21B

Configuration			
Flow Rate: 1.000 mL/min			
Light Scattering Instrument:			
Physical Instrument Name: miniDAWN			
RI Instrument:			
Physical Instrument Name: OptiLab			
UV Instrument:			
Channel Wavelength (nm) Response Factor (AUV)			
1*	210.0	1.000	
2	0.0	1.000	
3	0.0	1.000	
4	0.0	1.000	
Column:			
Description:			
Conventional Calibration Function: $S(v) = 10^{*}(11.95626978 - 0.5282795439 * 0.00937611991V^{*})$			
Solvent: citric acid aqueous			
Description: 0.1M citric acid buffer, pH2.74			
Processing			
Peak settings:			
Peak Limits (min) 14.921 ~ 20.352			
dV/dt (mL/g) 0.2008			
Results			
Peak Results			
Peak 1			
Masses			
Injected Mass (µg) 705.00			
Calculated Mass (µg) 2879.00			
Molar mass moments (g/mol)			
Mn 1.431*10 ⁴ (40.7244)			
Mp 1.358*10 ⁴ (30.7214)			
Mw 1.480*10 ⁴ (40.8044)			
M(wg) 1.320*10 ⁴ (40.0104)			
Peak 1			
Polydispersity			
Mw/Mn 1.004 (40.8408)			

FIG. 21C

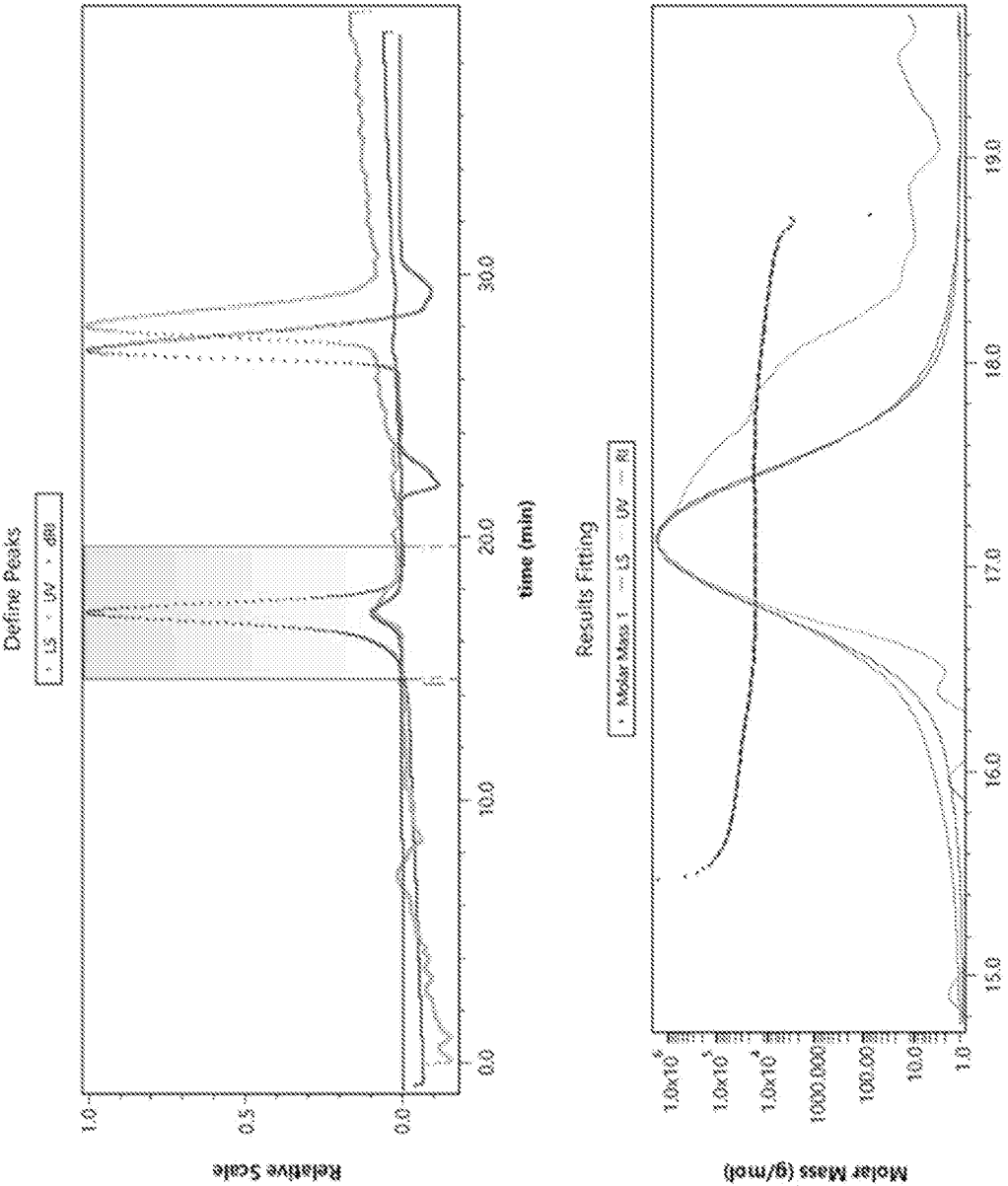


FIG. 22A

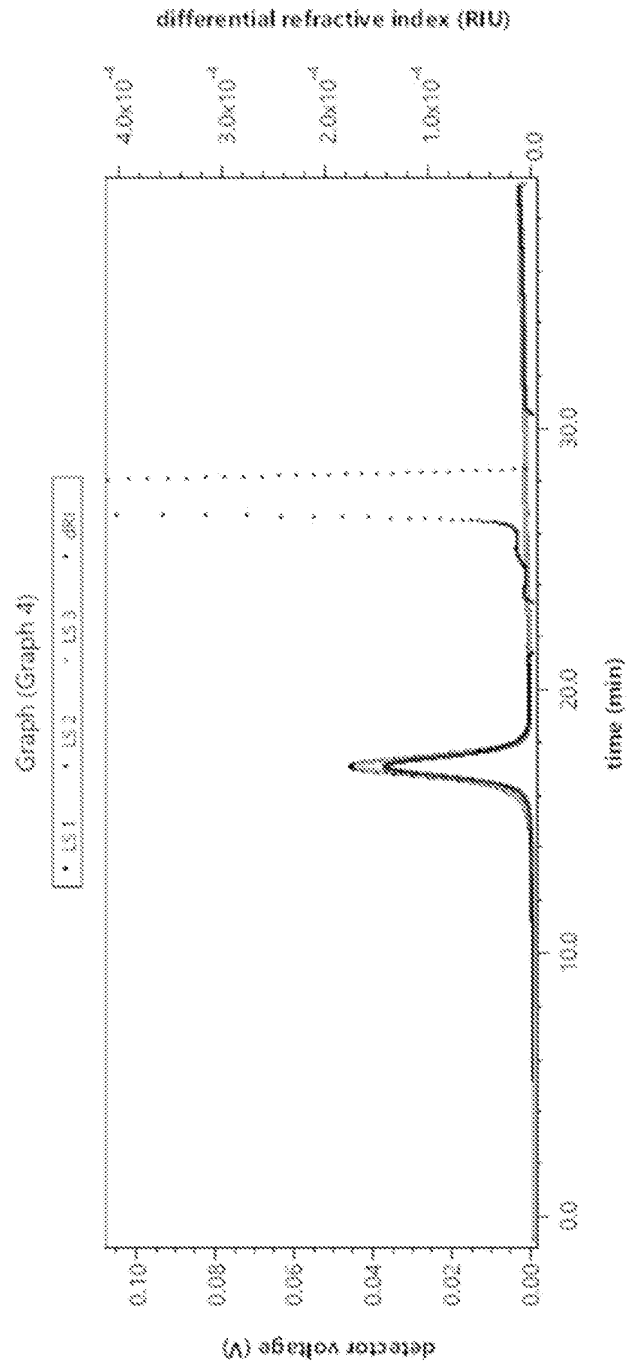


FIG. 22B

Configuration		
Flow Rate: 1.000 mL/min		
Light Scattering Instrument:		
Physical Instrument Name: miniASAX		
RI Instrument:		
Physical Instrument Name: OptiLab		
UV Instrument:		
Channel	Wavelength (nm)	Response Factor (AU/W)
1	210.0	1.000
2	0.0	1.000
3	0.0	1.000
4	0.0	1.000
Column:		
Description:		
Conventional Calibration Function: $R(\nu) = 10^4(11.90826978 + 0.628279043\nu + 0.00897611881\nu^2)$		
Solvent: citric acid aqueous		
Description: 0.1M Citric acid buffer, pH2.74		
Processing		
Peak settings:		
Peak Limits (min)	14.437	16.871
dn/dc (mL/g)	0.2000	
Results		
Peak Results	Peak 1	
Masses		
Injected Mass (µg)	750.00	
Calculated Mass (µg)	478.07	
Molar mass moments (g/mol)		
Mn	1.544×10^4 (21.45%)	
Mp	1.675×10^4 (20.61%)	
Mw	1.422×10^4 (20.03%)	
M(ave)	1.590×10^4 (20.00%)	
Polydispersity	Peak 1	
Mw/Mn	1.056 (21.45%)	

FIG. 22C

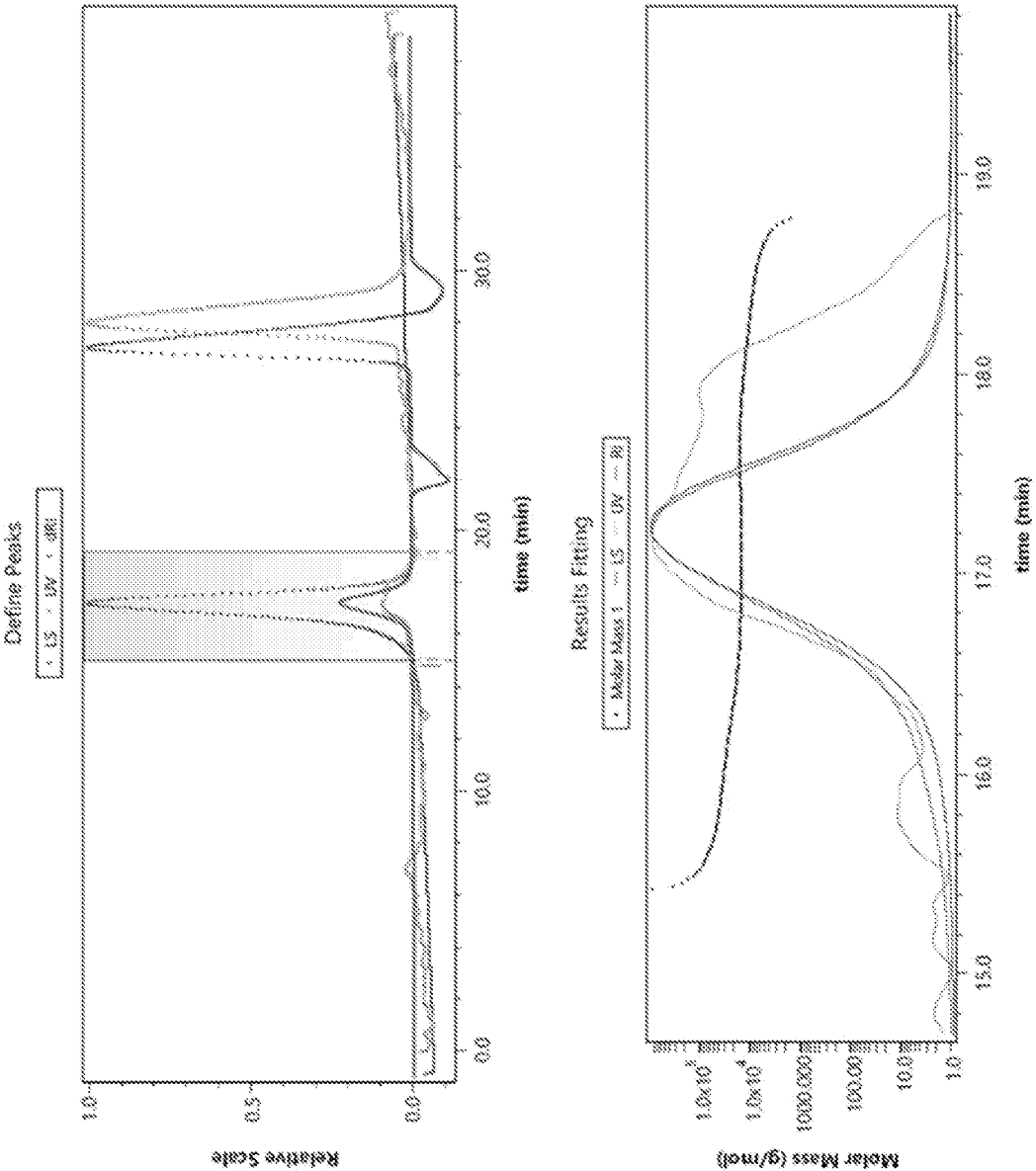


FIG. 23A

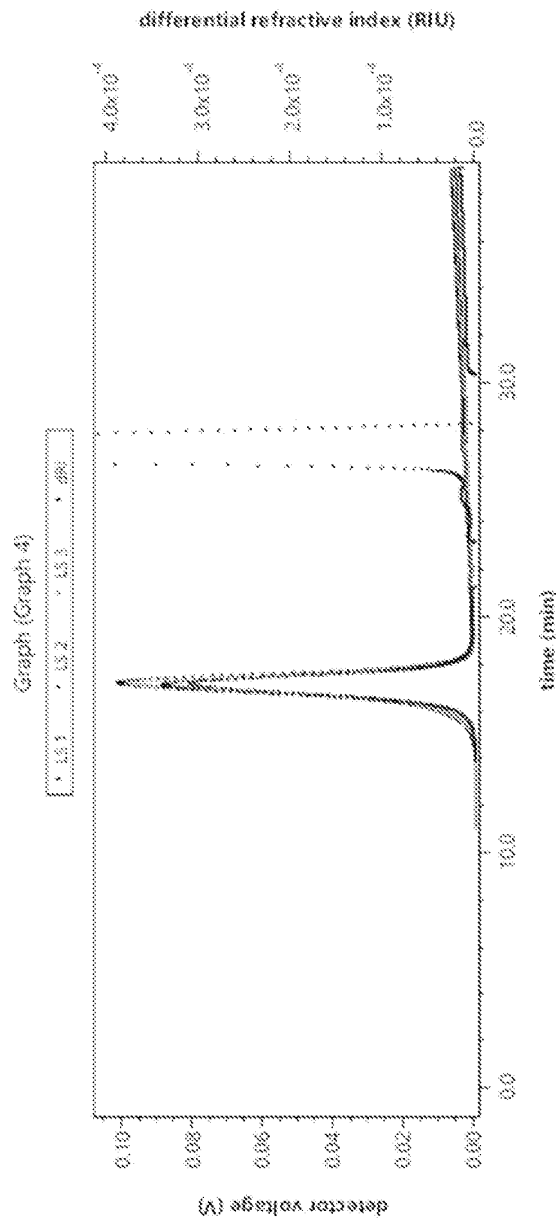


FIG. 23B

Configuration		
Flow Rate: 1.000 mL/min		
Light Scattering Instrument:		
Physical Instrument Name: miniDAK8		
RI Instrument:		
Physical Instrument Name: OptiLab		
UV Instrument:		
Channel Wavelength (nm) Response Factor (AU/W)		
1	230.0	1.000
2	0.0	1.000
3	0.0	1.000
4	0.0	1.000
Column:		
Description:		
Conventional Calibration Function: $MW = 10^{-(0.0000000000 + 0.0000000000 \cdot 0.0000000000 + 0.0000000000 \cdot 0.0000000000)}$		
Solvent: citric acid aqueous		
Description: 0.1M Citric acid buffer, pH2.74		
Processing		
Peak settings:		
Peak Limits (min)	18.049	18.243
Width (ml/h)	0.000	
Results		
Peak Results		
Masses		
Peak 1		
Injected Mass (ug)		
750.00		
Calculated Mass (ug)		
1856.07		
Molar mass moments (g/mol)		
Mn	1.808e+04	(±0.043%)
Mp	1.488e+04	(±0.013%)
Mw	1.554e+04	(±0.007%)
M(wg)	1.838e+04	(±0.001%)
Polydispersity		
Peak 1		
Mw/Mn	1.030	(±0.047%)

FIG. 23C

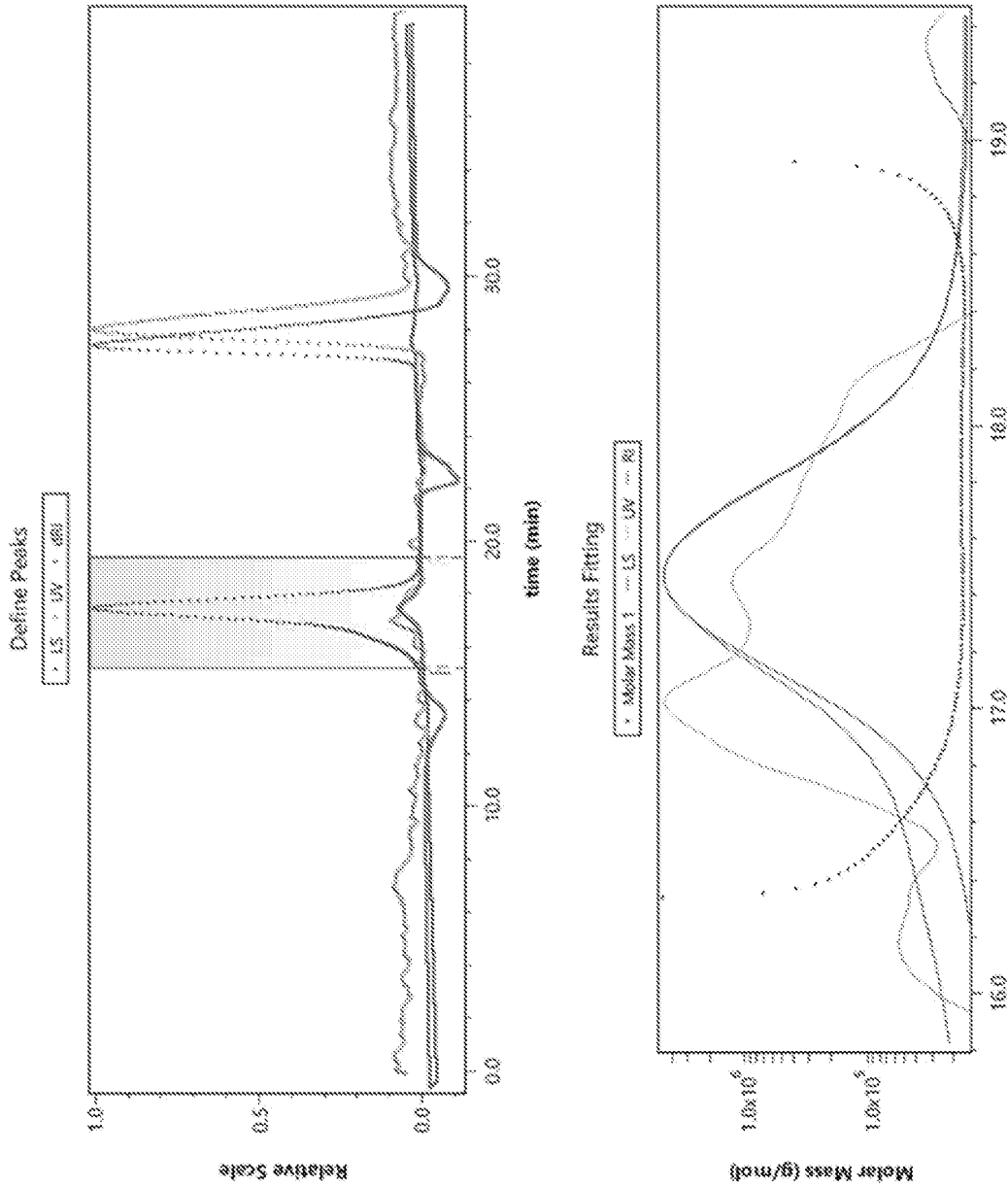


FIG. 24A

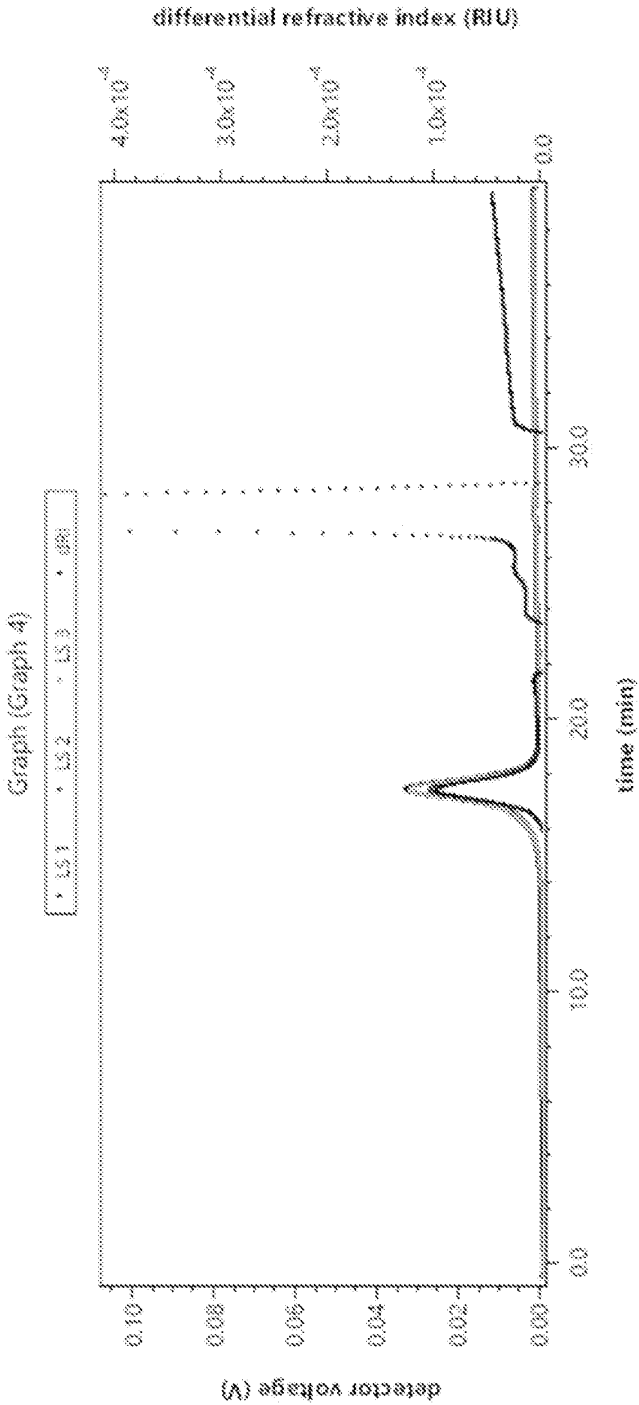


FIG. 24B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: nua103004	
RI Instrument:	
Physical Instrument Name: Qc1140b	
UV Instrument:	
Channel	Wavelength (nm)
1*	210.0
2	0.0
3	0.0
4	0.0
Response Factor (AU/V)	
1*	1.000
2	1.000
3	1.000
4	1.000
Column:	
Description:	
Conventional Calibration Function: $0(r) = 10^{*}(11.3662878 - 0.42827648r + 0.00887413561r^2)$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH 2.78	
Processing	
Peak settings:	
Peak Limits (min)	15.244 ~ 16.421
divide (ml/g)	0.2000
Results	
Peak Results	Peak 1
Masses	
Injected Mass (µg)	208.00
Calculated Mass (µg)	407.61
Molar mass moments (g/mol)	
Mn	1.750×10^4 (±0.0548)
Mp	1.439×10^4 (±0.0548)
Mw	1.880×10^4 (±0.0456)
M(ave)	1.746×10^4 (±0.0538)
Polydispersity	Peak 1
Mw/Mn	1.058 (±0.0548)

FIG. 24C

Acquisition Time (sec)	4.9999	Comment	DP07-60-1-TFF-1
Date	Apr 29 2021	Date Stamp	Apr 29 2021
File Name	\\192.168.7.14\nmri\pererada\DP07-60-1-TFF-1_20210429_1\DP07-60-1-TFF-1_20210429_01\PROTON_02.fid\fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	s2pul
Receiver Gain	20.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

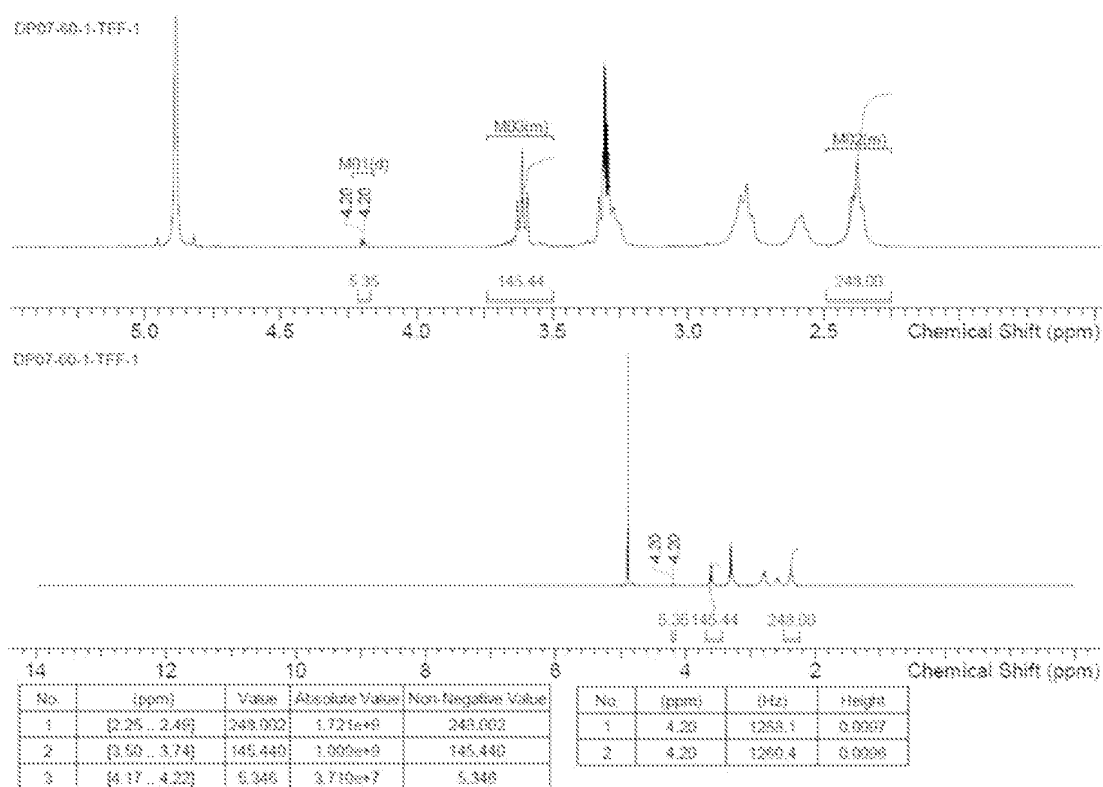
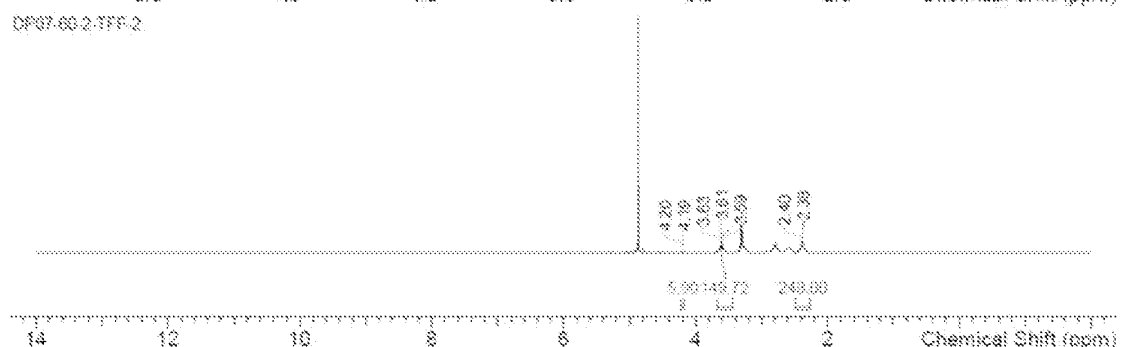
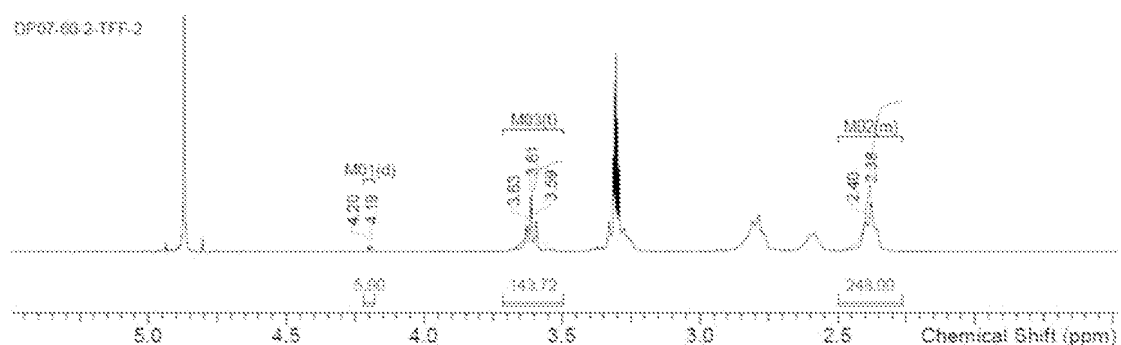


FIG. 25

Acquisition Time (sec)	4.9999	Comment	DP07-60-2-TFF-2
Date	Apr 30 2021	Date Stamp	Apr 30 2021
File Name	\192.168.7.14\nmr\pererada\DP07-60-2-TFF-2_20210430_DP07-60-2-TFF-2_20210430_01\PROTON_02.fid\fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	sgpul
Receiver Gain	28.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		



No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[2.26 ... 2.50]	248.000	1.523e+5	248.000
2	[3.45 ... 3.72]	148.722	1.161e+5	148.722
3	[4.18 ... 4.22]	5.803	4.578e+7	5.803

No	(ppm)	(Hz)	Height
1	2.39	713.3	0.0405
2	2.40	719.6	0.0296
3	3.59	1077.6	0.0315
4	3.61	1083.1	0.0305
5	3.63	1086.8	0.0293
6	4.19	1267.9	0.0083
7	4.20	1280.4	0.0080

FIG. 26

Acquisition Time (sec)	4.9999	Comment	DP07-60-3-TFF-1M
Date	Apr 30 2021	Date Stamp	Apr 30 2021
File Name	\\192.168.7.14\mr\perarada\DP07-60-3-TFF-1M_20210430_DP07-60-3-TFF-1M_20210430_01\PROTON_02.fid\fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	g2pul
Receiver Gain	24.00	SW(cyclical) (Hz)	4793.85
Solvent	METHANOL-d ₄	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

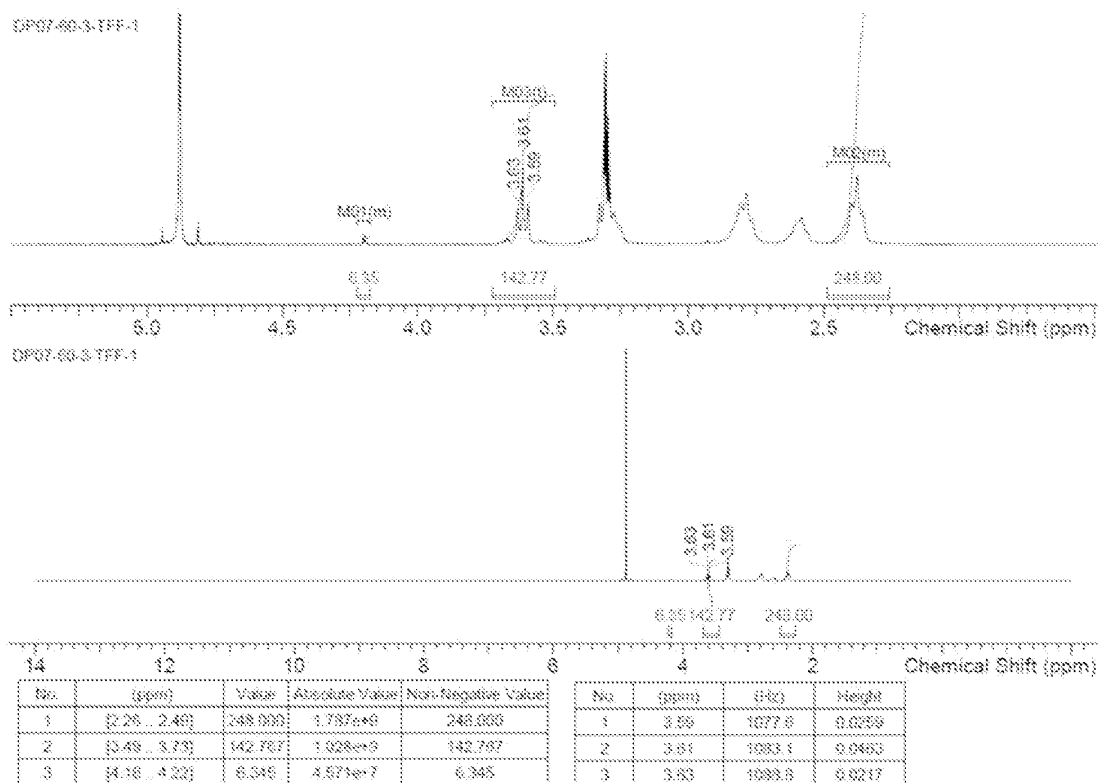


FIG. 27

Acquisition Time (sec)	4.9999	Comment	DP07-60-4-TFF-1
Date	May 3 2021	Date Stamp	May 3 2021
File Name	\\192.168.7.14\mri\pererada\DP07-60-4-TFF-1_20210503_DP07-60-4-TFF-1_20210503_01\PROTON_02.fid\fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	sgpul
Receiver Gain	22.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d ₄	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

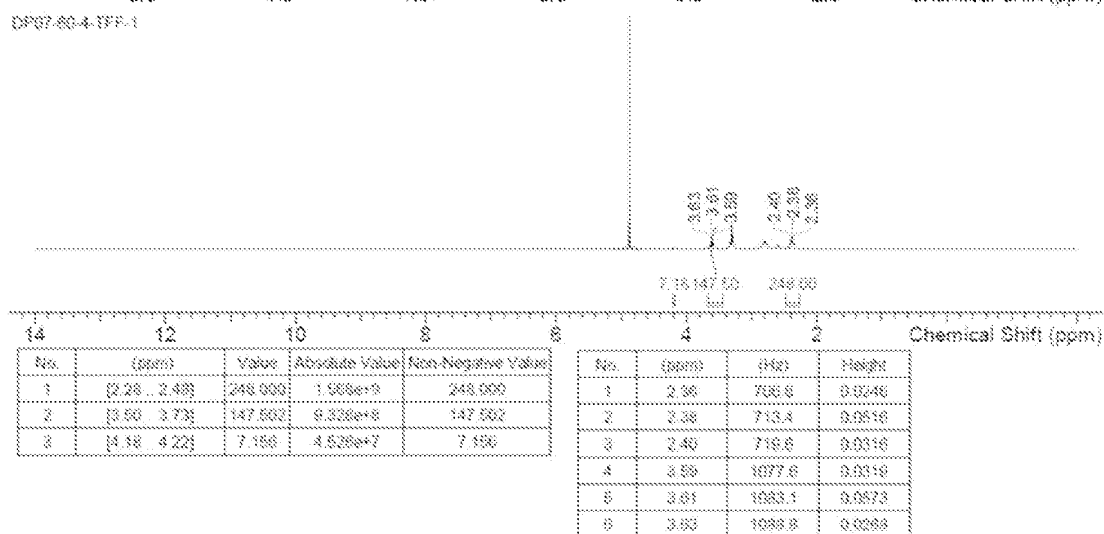
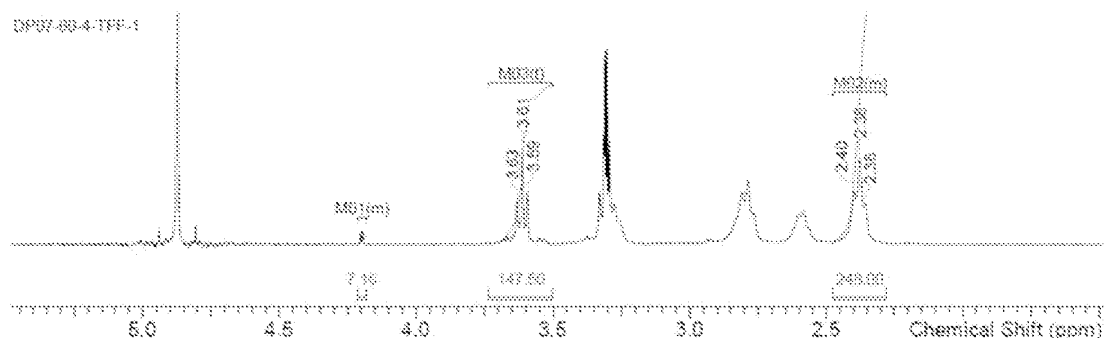


FIG. 28

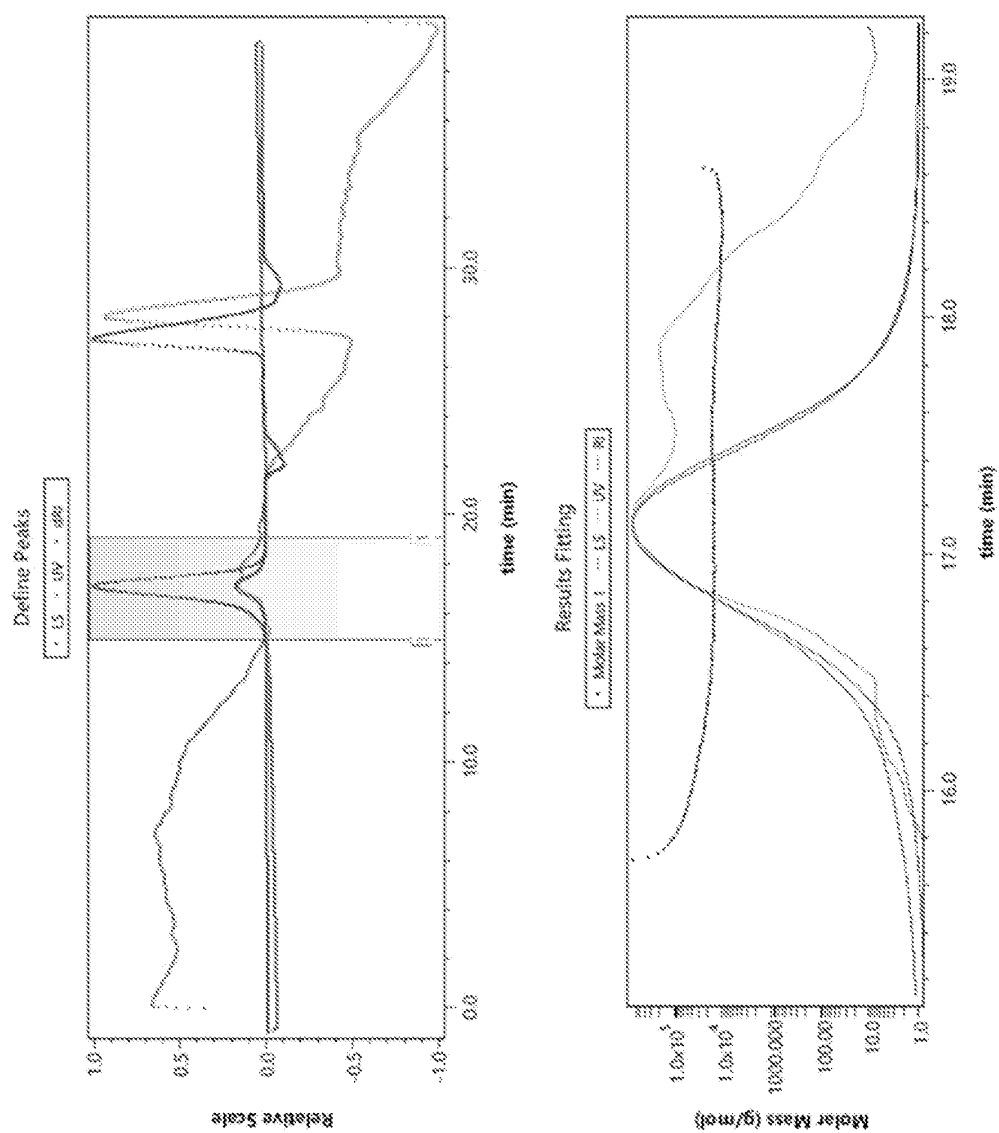


FIG. 29A

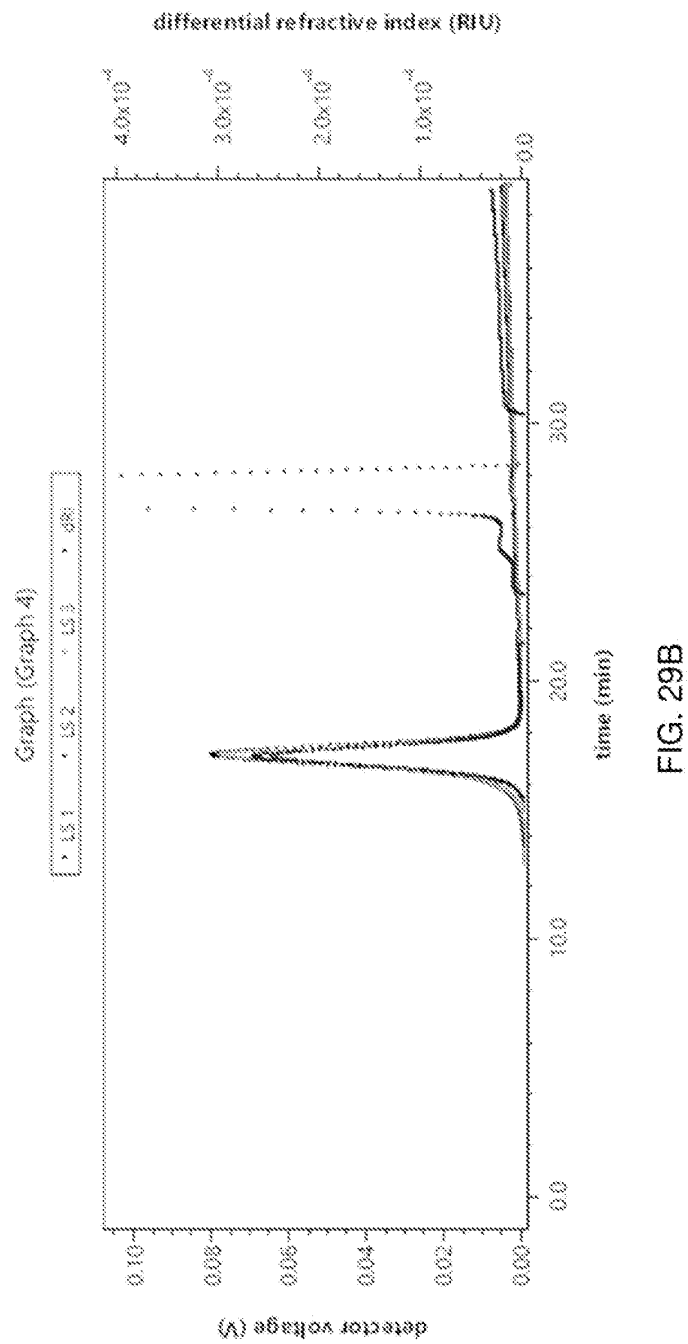


FIG. 29B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: 66162009	
RI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel Wavelength (nm) Response Factor (AUW)	
1 210.0 1.000	
2 0.0 1.000	
3 0.0 1.000	
4 0.0 1.000	
Column:	
Description:	
Conventional Calibration Function: $WV = 10^{(11.8684696 + 0.001760439 \times 0.000762189166)}$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH3.74	
Processing	
Peak settings:	
Peak Limits (min)	14.900 ~ 19.100
Width (min)	0.2000
Results	
Peak Results	Peak 1
Masses	
Injected Mass (ug)	708.00
Calculated Mass (ug)	1055.11
Molar mass moments (g/mol)	
Mn	1.918×10^4 (±0.000%)
Mp	1.977×10^4 (±0.000%)
Mw	2.173×10^4 (±0.000%)
Mw/Mn	1.133×10^0 (±0.000%)
Polydispersity Mw/Mn	1.006 (±0.000%)

FIG. 29C

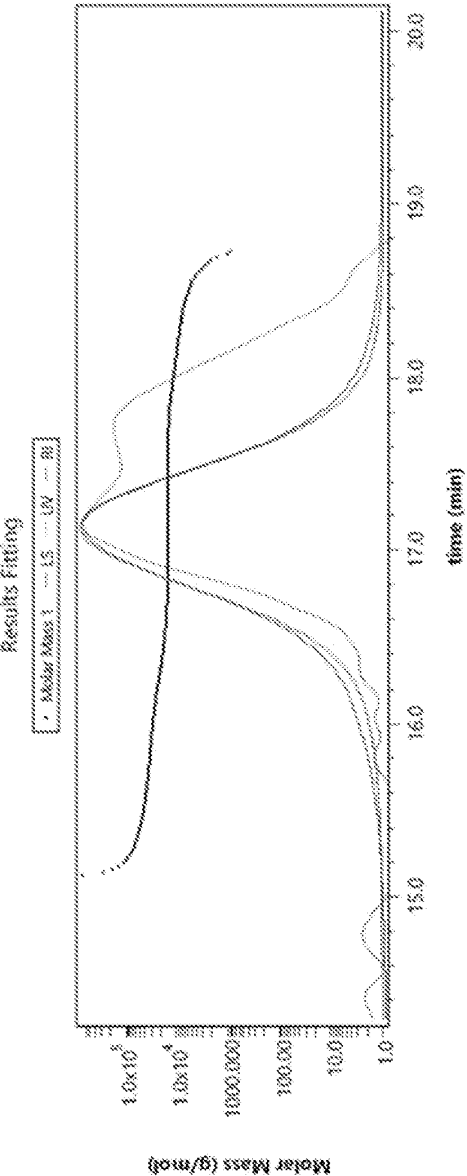
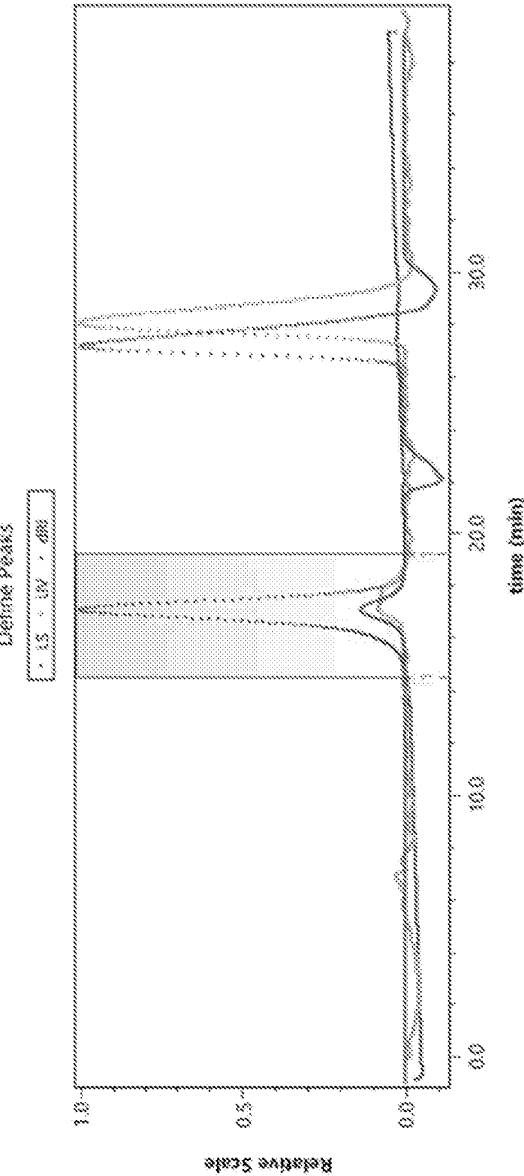


FIG. 30A

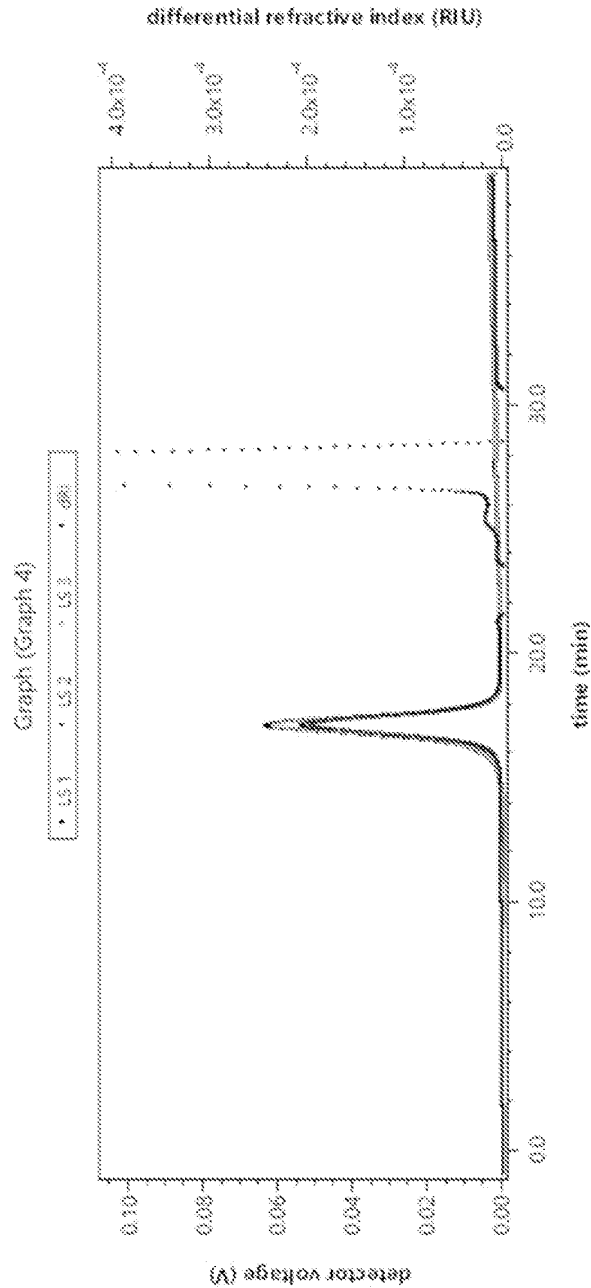


FIG. 30B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: miniDAWN	
BI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel	Wavelength (nm)
1	210.0
2	210.0
3	210.0
4	210.0
Response Factor (AU/V)	
1	1.000
2	1.000
3	1.000
4	1.000
Column:	
Description:	
Conventional Cationic Polymerization: $[M] = 10^{-4}$ (11.9842878 + 0.400755437 + 0.000374198124)	
Solvent: acetic acid aqueous	
Description: 0.10 Citric acid buffer, pH 5.74	
Processing	
Peak settings:	
Peak Limits (min)	14.559 + 10.000
dur (min)	0.000
Results	
Peak Results	Peak 1
Masses:	
Injected Mass (µg)	700.00
Calculated Mass (µg)	870.40
Molar mass moments (g/mol)	
Mn	1.510×10 ⁴ (±0.003)
Mp	1.500×10 ⁴ (±0.011)
Mw	1.560×10 ⁴ (±0.003)
M(wg)	1.511×10 ⁴ (±0.003)
Polydispersity	
Mw/Mn	1.004 (±0.000)

FIG. 30C

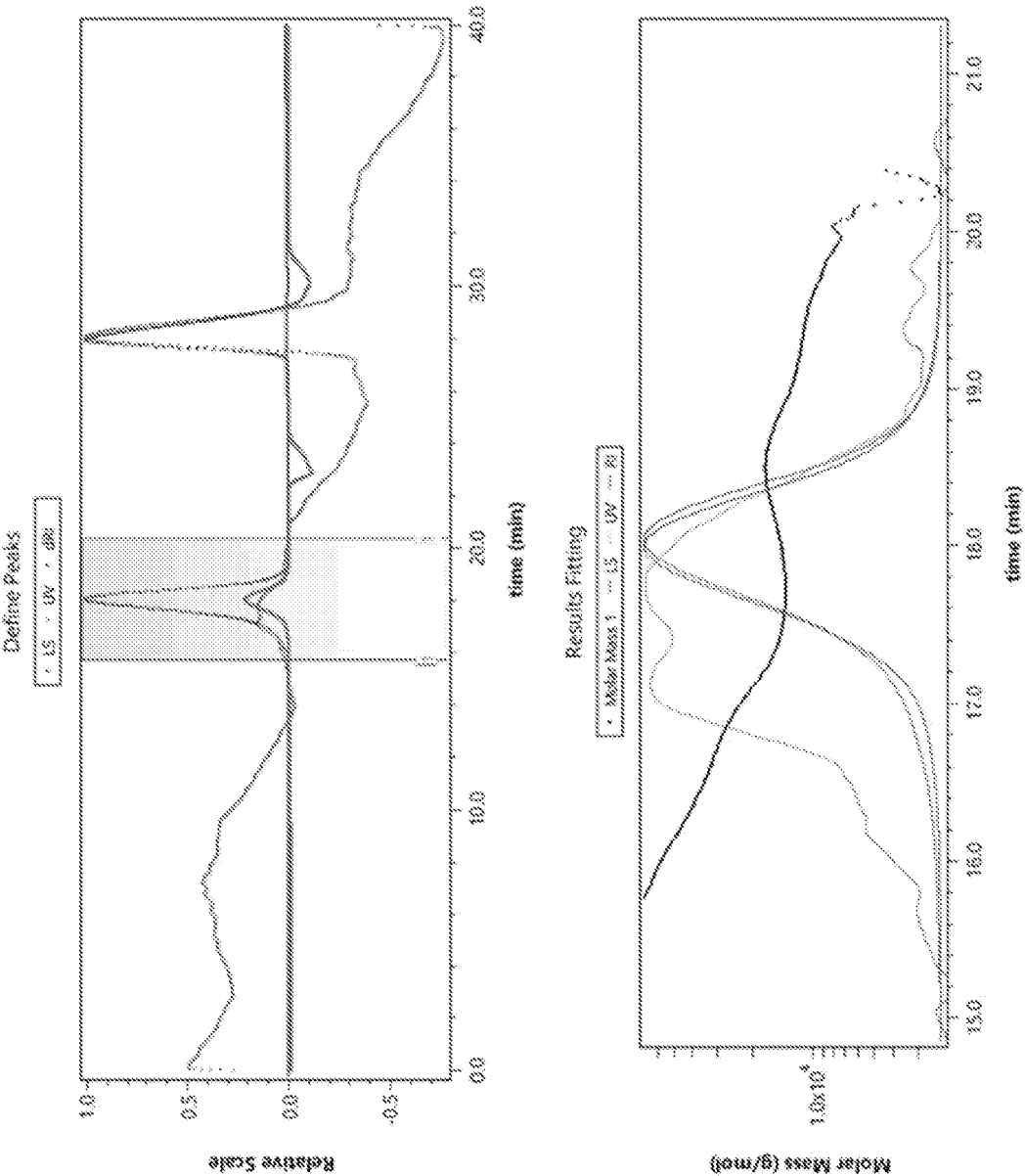


FIG. 31A

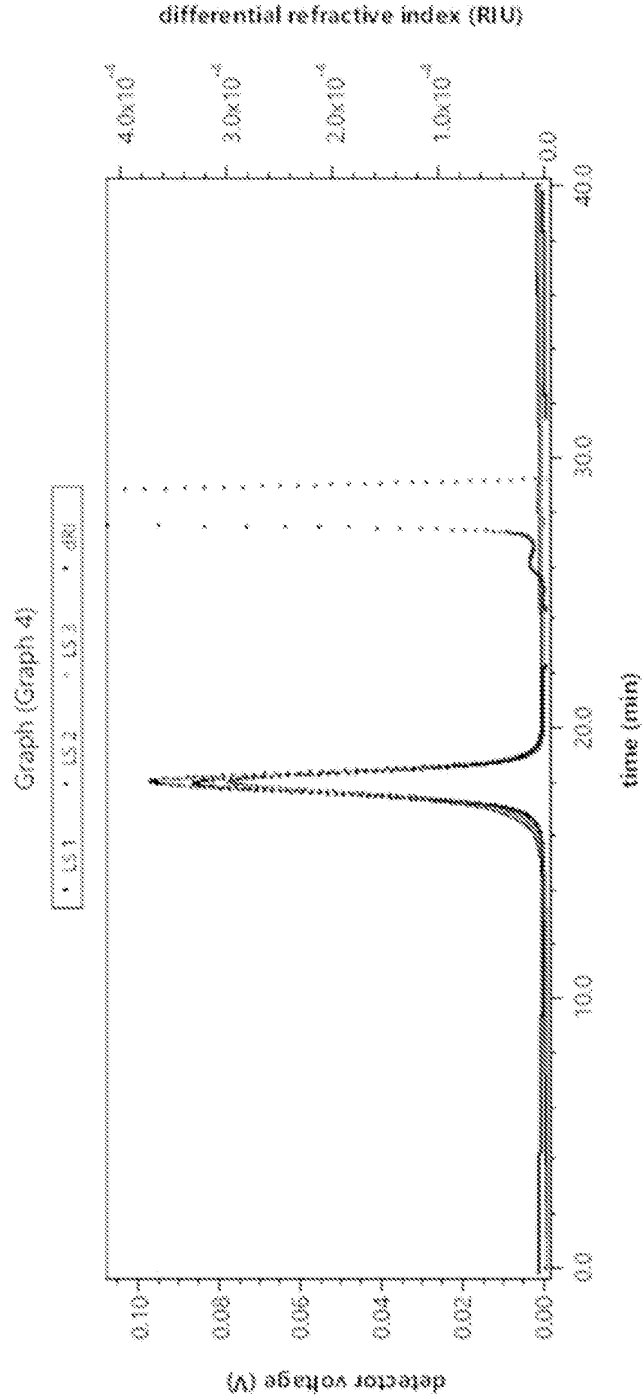


FIG. 31B

Configuration			
Flow Rate: 1.000 mL/min			
Light Scattering Instrument:			
Physical Instrument Name: sds1202S			
RI Instrument:			
Physical Instrument Name: OptiLab			
UV Instrument:			
Channel Wavelength (nm) Response Factor (AU/W)			
1 210.0 1.000			
2 260 1.000			
3 280 1.000			
4 300 1.000			
Column:			
Description:			
Conventional Calibration Function: $R(V) = 10^{(11.90026978 + 0.000070490 \cdot V + 0.000000000 \cdot V^2)}$			
Solvent: citric acid aqueous			
Description: 0.1M Citric acid buffer, pH2.74			
Processing			
Peak settings:			
Peak Limits (min) 15.740 - 20.464			
dn/dc (mL/g) 0.0000			
Results			
Peak Results			
Peak 1			
Masses			
Injected Mass (pg) 700.00			
Calculated Mass (pg) 1600.47			
Molar mass moments (g/mol)			
Mn 2.438x10 ⁴ (±0.044%)			
Mp 3.438x10 ⁴ (±0.018%)			
Mw 1.555x10 ⁴ (±0.003%)			
M(wg) 1.507x10 ⁴ (±0.003%)			
Peak 1			
Polydispersity			
Mw/Mn 1.026 (±0.000%)			

FIG. 31C

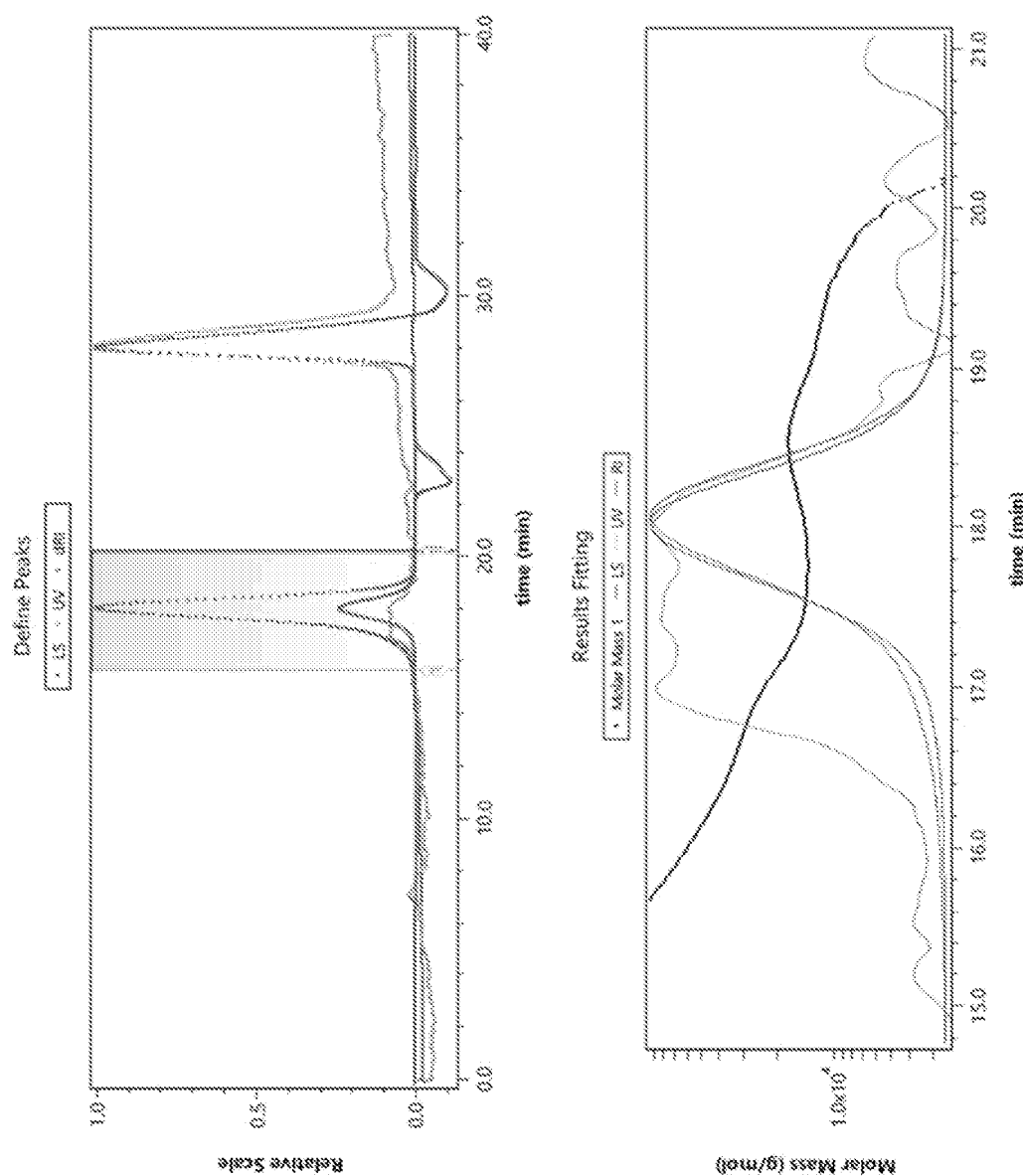


FIG. 32A

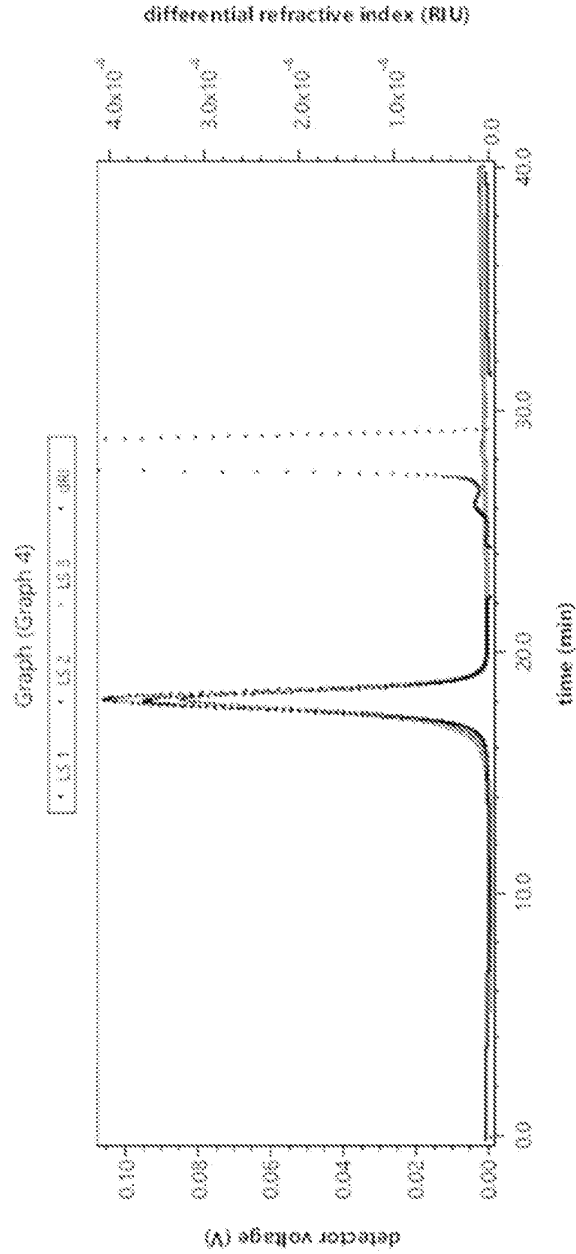


FIG. 32B

Configuration			
Flow Rate: 1.000 mL/min			
Light Scattering Instrument:			
Physical Instrument Name: mcl125205			
RI Instrument:			
Physical Instrument Name: OptiLab			
UV Instrument:			
Channel Wavelength (nm) Response Factor (AU/V)			
1	210.0	1.000	
2	0.0	1.000	
3	0.0	1.000	
4	0.0	1.000	
Column:			
Description:			
Conventional Calibration Function: $M[W] = 10^{(0.1196623578 - 0.400706439x + 0.000761198x^2)}$			
Solvent: citric acid aqueous			
Description: 0.1M citric acid buffer, pH3.54			
Processing			
Peak settings:			
Peak Limits (min)	15.555	~	20.204
dn/dc (mL/g)	0.1508		
Results			
Peak Results			
Peak 1			
Masses			
Injected Mass (µg)			
703.70			
Calculated Mass (µg)			
1779.89			
Molar mass moments (g/mol)			
Mn	1.488×10^5	(20.0318)	
Mp	1.408×10^5	(20.0083)	
Mw	1.528×10^5	(20.0183)	
M(wgt)	1.480×10^5	(20.0018)	
Polydispersity			
Peak 1			
Mw/Mn	1.006	(20.0066)	

FIG. 32C

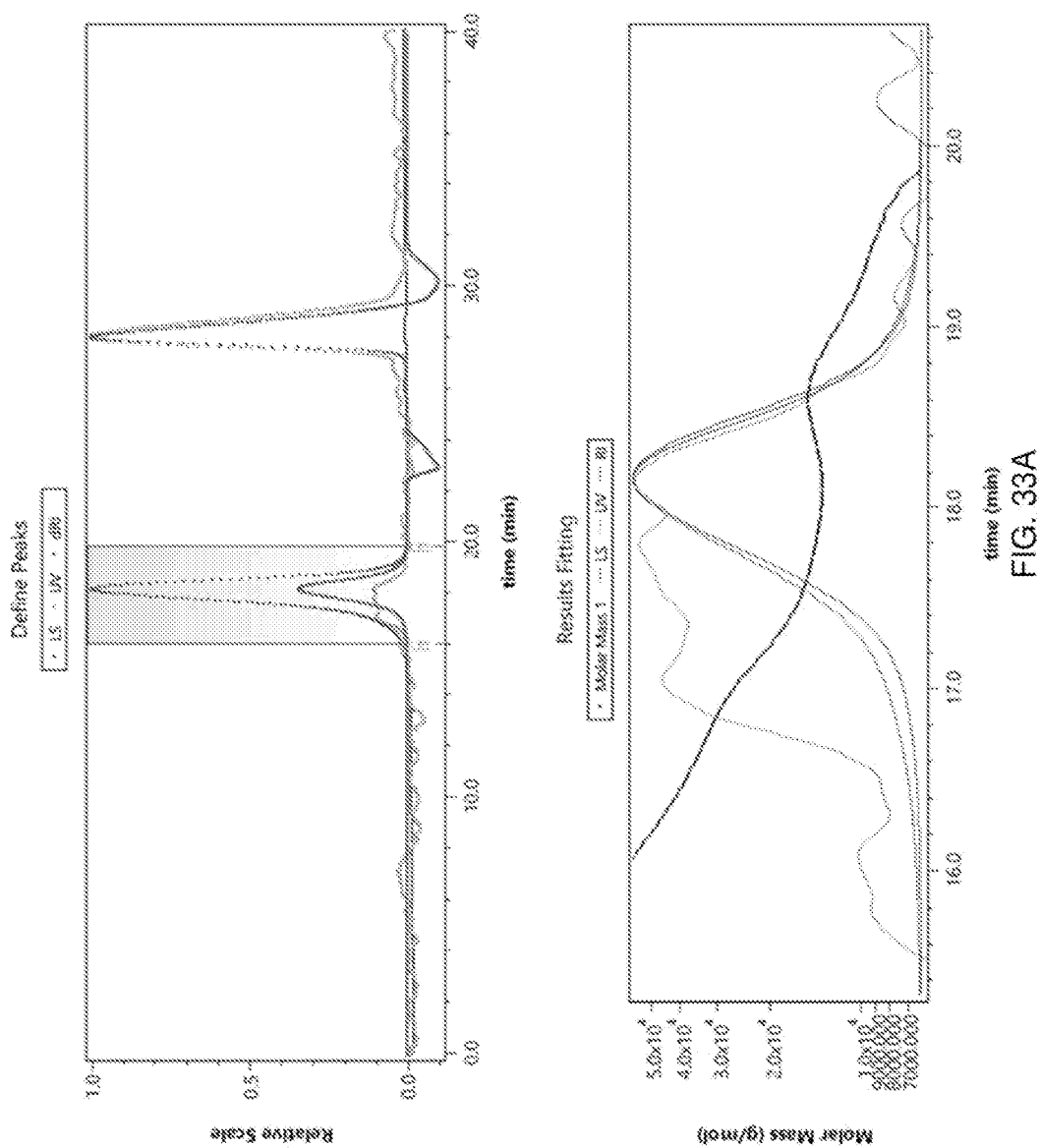


FIG. 33A

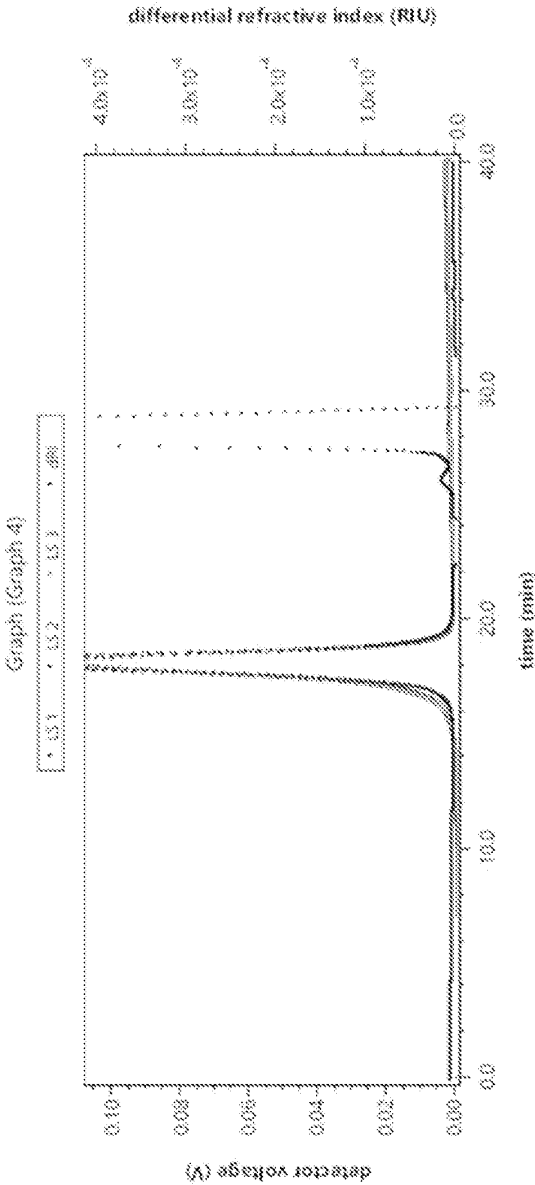
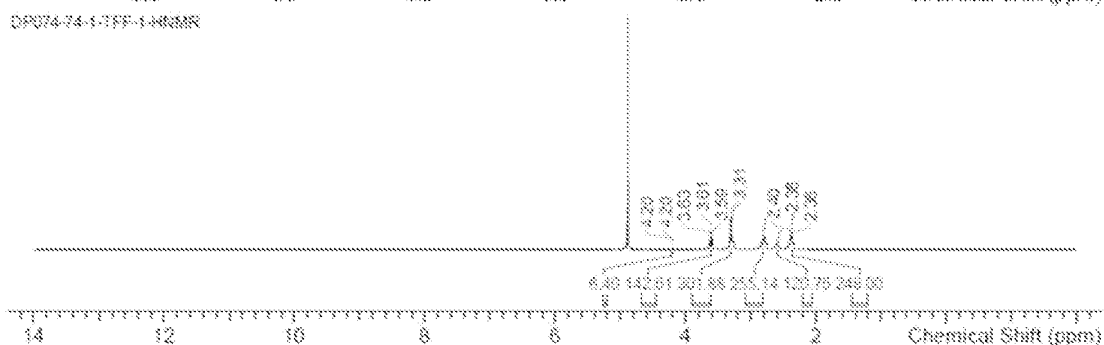
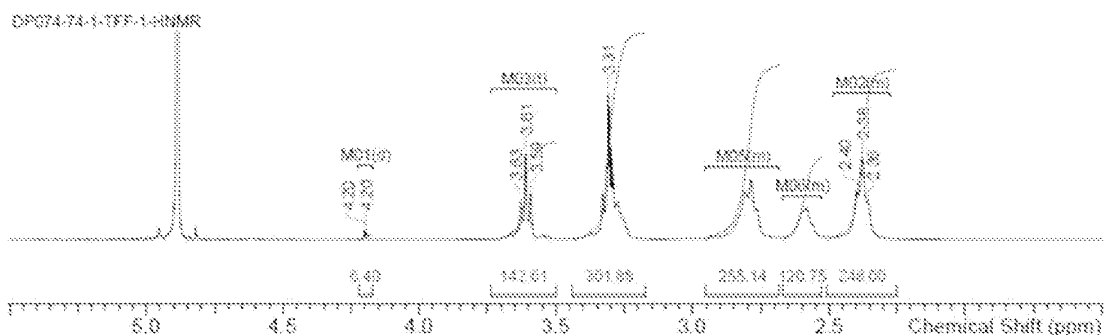


FIG. 33B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: mclsdms	
RI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel	Wavelength (nm)
1	210.0
2	210.0
3	210.0
4	210.0
Response Factor (AU/g)	
1	1.000
2	1.000
3	1.000
4	1.000
Column:	
Description:	
Conventional Calibration Function: $N(x) = 10^6 (11.5662878 - 0.42320943x + 0.00376118x^2)$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH 3.4	
Processing	
Peak settings:	
Peak Limits (min) 10.000 ~ 18.000	
dn/dc (mL/g) 0.1800	
Results	
Peak Results	Peak 1
Masses	
Injected Mass (µg)	708.00
Calculated Mass (µg)	2625.38
Molar mass moments (g/mol)	
Mn	1.432×10^4 (±0.027%)
Mp	1.339×10^4 (±0.044%)
Mw	1.920×10^4 (±0.015%)
M(wg)	1.400×10^4 (±0.001%)
Polydispersity	
Mw/Mn	1.339 (±0.028%)

FIG. 33C

Acquisition Time (sec)	4.9999	Comment	DP07-74-1-TFF-1
Date	May 11 2021	Date Stamp	May 11 2021
File Name	\\192.168.7.14\nmr\pererada\DP07-74-1-TFF-1_20210511_DP07-74-1-TFF-1_20210511_01\PROTON_02.fid.fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	s2pul
Receiver Gain	20.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		



No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[2.25 ... 2.51]	248.000	2.129e+5	248.000
2	[2.53 ... 2.67]	120.754	1.077e+5	120.754
3	[2.68 ... 2.85]	255.139	2.191e+5	255.139
4	[3.17 ... 3.44]	301.879	2.592e+5	301.879
5	[3.50 ... 3.74]	142.607	1.224e+5	142.607
6	[4.17 ... 4.23]	5.401	5.496e+7	5.401

No.	(ppm)	(Hz)	Height
1	2.38	706.6	0.0375
2	2.39	712.3	0.0770
3	2.40	719.4	0.0474
4	3.31	992.0	0.1360
5	3.59	1077.4	0.0453
6	3.61	1083.1	0.0913
7	3.63	1089.0	0.0385
8	4.20	1258.1	0.0093
9	4.20	1260.4	0.0089

FIG. 34

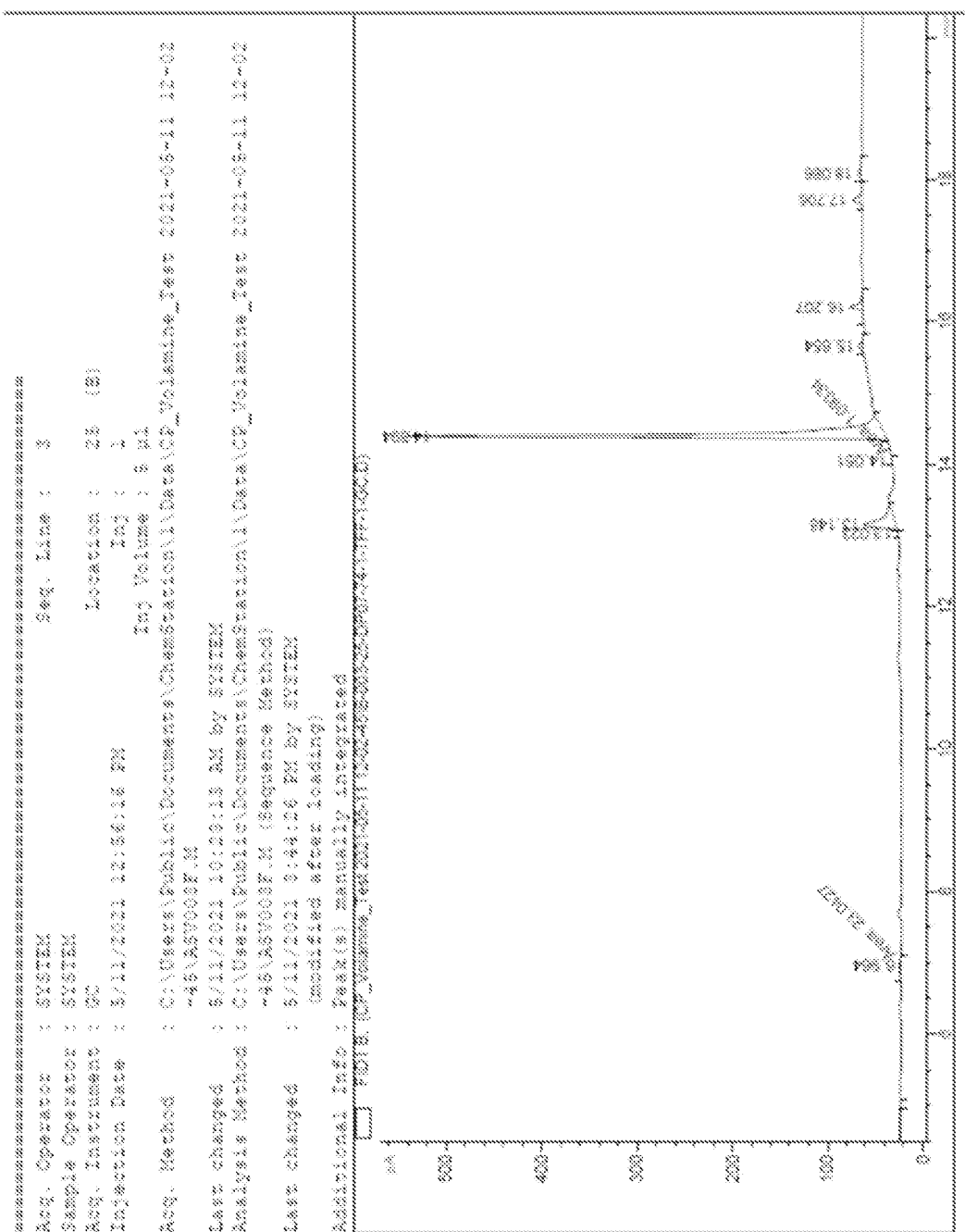


FIG. 35A

Area Percent Report									
Sorted By : Signal									
Multiplier : 1.000									
Dilution : 1.000									
Do not use Multiplier & Dilution factor with ITCs									
Signal 1: FID1 B,									
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %			
1	1.770	BB	0.140	1.231066	1.483664	8.3312			
2	3.402	BB R	0.074	2.224224	9.404664	14.53074			
3	4.231	BB B	0.080	87.37628	12.26432	0.0209			
4	4.964	BB	0.161	23.04280	8.28874	0.03102			
5	10.020	BB	0.090	4.41760	1.83849	0.00620			
6	15.148	BB	0.118	262.68231	93.7467	0.0116			
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %			
7	14.061	BB	0.043	1.09304	4.40218e-1	4.366e-5			
8	14.964	BB	0.052	1946.00746	502.37101	0.00642			
9	16.654	BB	0.041	31.16699	5.04155	0.00138			
10	16.207	BB	0.072	71.80607	14.37209	0.0019			
11	17.706	BB	0.077	43.60214	10.04153	0.0021			
12	18.094	BB	0.076	22.66914	4.62420	0.00102			
Totals :						0.231066	1.091666		

FIG. 35B

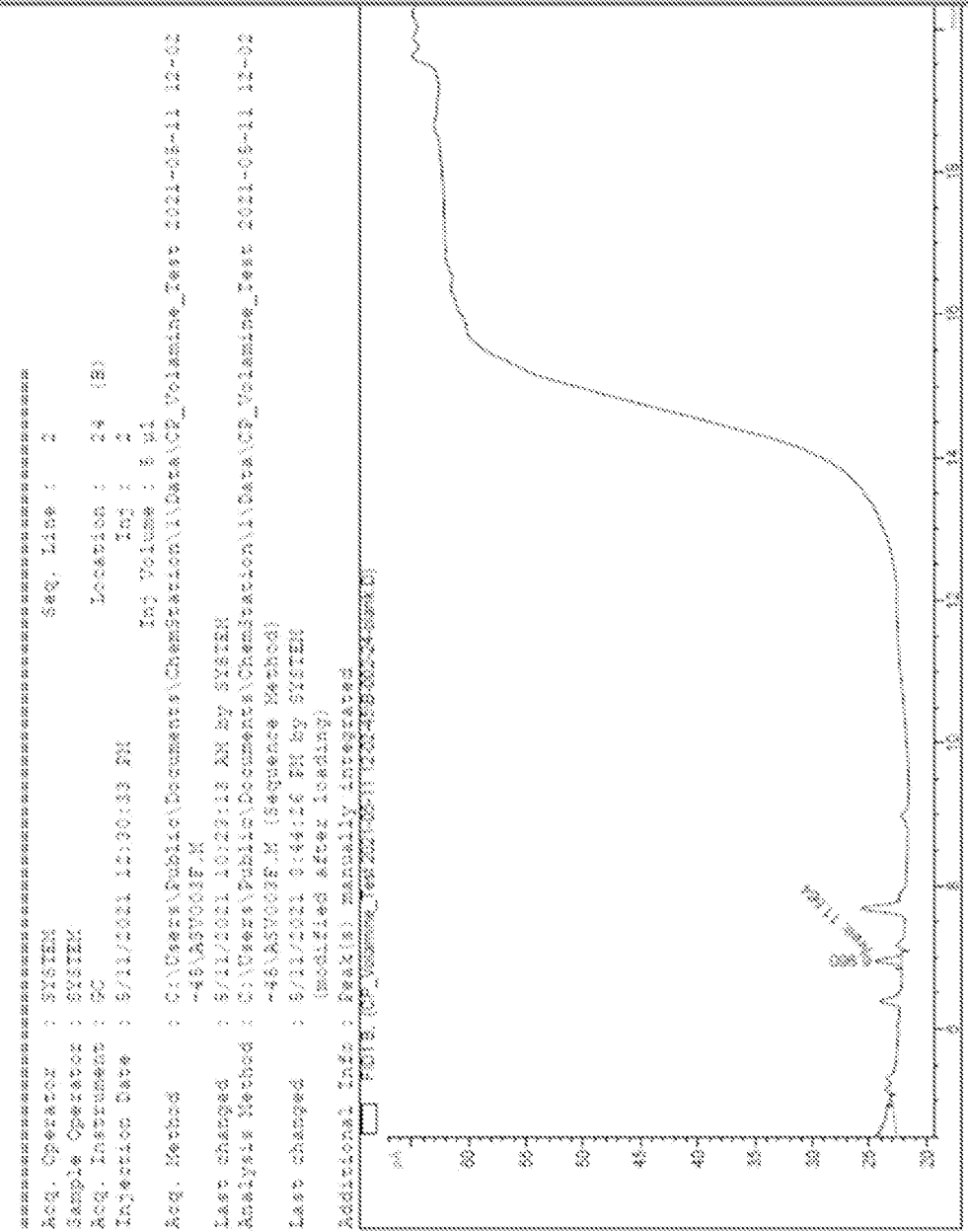


FIG. 36A

Area Percent Report									
Sorted By : Signal									
Multiplier : 1.000									
Dilution : 1.000									
Do not use Multiplier & Dilution Factor with ISTDs									
Signal 1: TID1 B,									
Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %			
1	3.429	BF R	0.0917	2.3753466	9.0753144	99.99650			
2	4.240	VB Z	0.0792	74.61007	19.04870	0.00304			
3	6.960	ISZ	0.0607	11.56404	2.33116	0.00049			
Totals :				2.3753466	9.0771049				

FIG. 36B

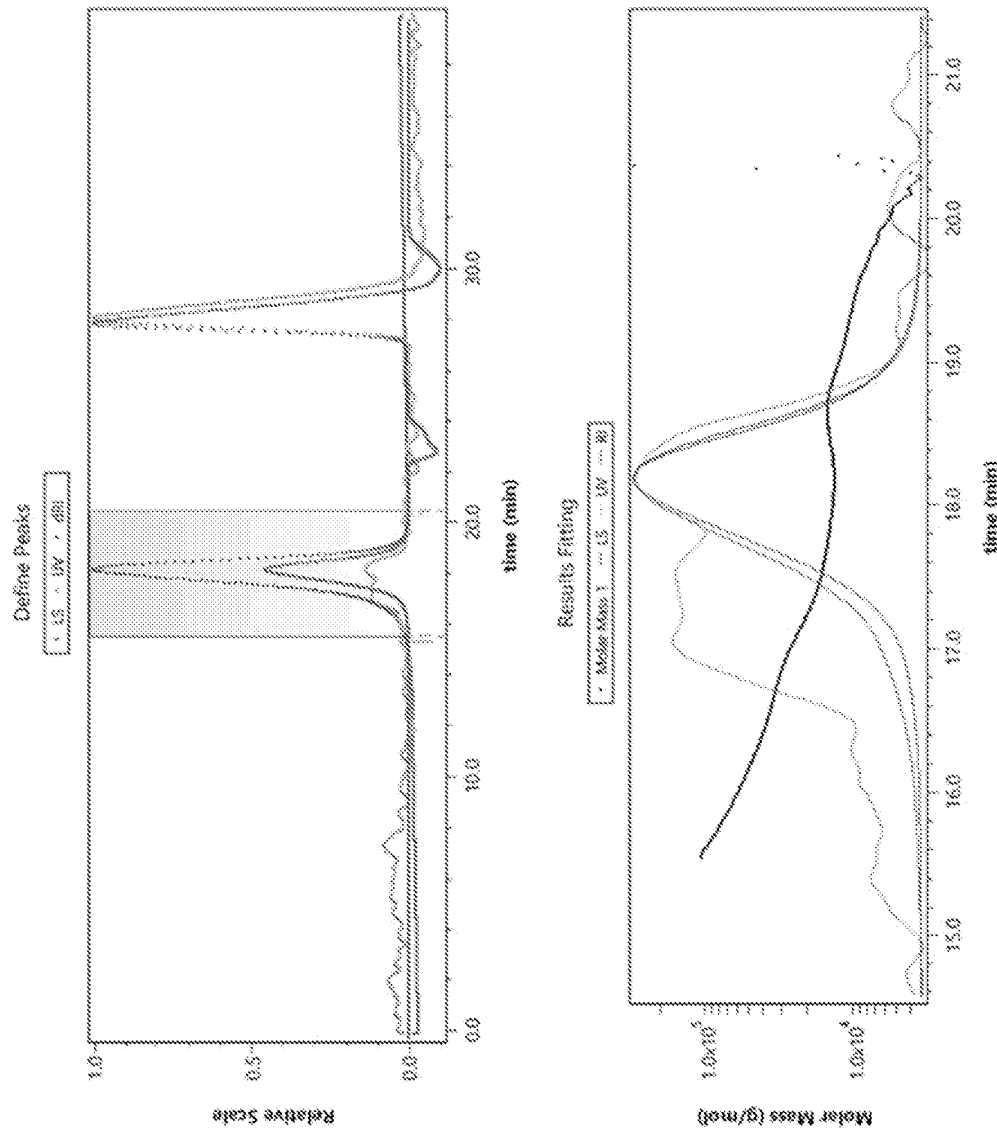


FIG. 37A

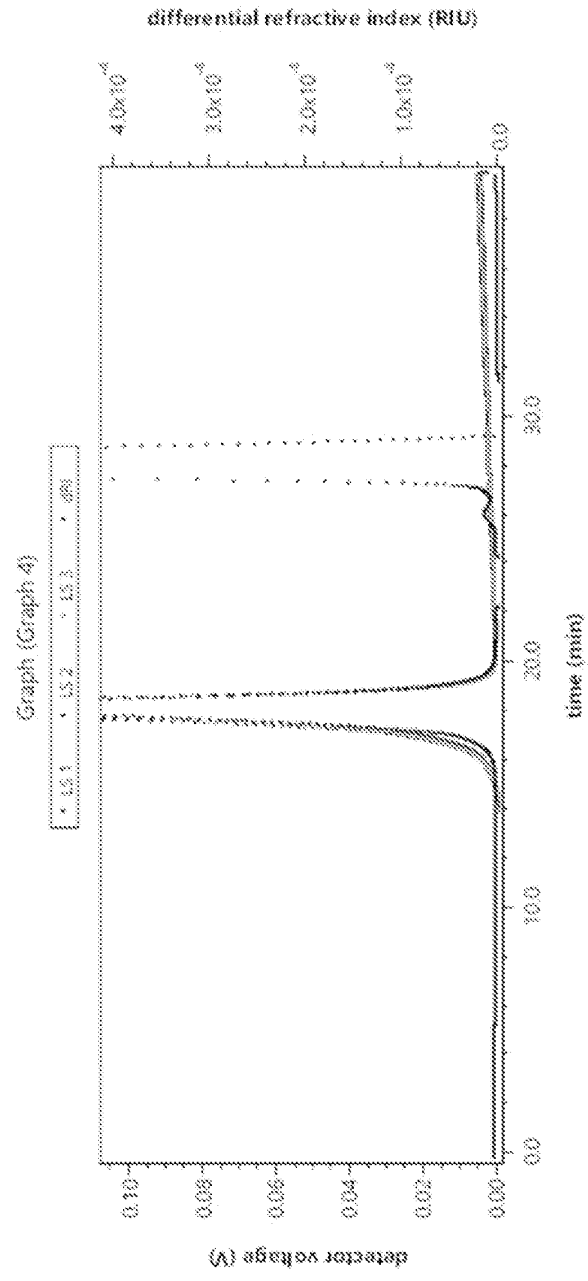


FIG. 37B

Configuration	
Flow Rate:	1.000 mL/min
Light Scattering Instrument:	
Physical Instrument Name:	sci-022000
RI Instrument:	
Physical Instrument Name:	OptiLab
UV Instrument:	
Channel Wavelength (nm) Response Factor (AUV)	
1	210.0 1.000
2	210.0 1.000
3	210.0 1.000
4	210.0 1.000
Column:	
Description:	
Conventional Calibration Function: $M(V) = 10^6(11.662278 + 0.0227764V + 0.000762199V^2)$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH2.74	
Processing	
Peak settings:	
Peak Limits (min)	15.544 - 20.457
dn/dc (mL/g)	0.1008
Results	
Peak Results	Peak 1
Masses	
Injected Mass (pg)	700.00
Calculated Mass (pg)	3468.04
Molar mass moments (g/mol)	
Mn	1.412×10^4 (± 0.0304)
Mp	1.385×10^4 (± 0.0424)
Mw	2.743×10^4 (± 0.0188)
M(ave)	1.745×10^4 (± 0.3028)
Polydispersity	
Mw/Mn	1.000 (± 0.0384)

FIG. 37C

Acquisition Time (sec)	4.9999	Comment	DP07-68-1-TFF-1
Date	May 12 2021	Date Stamp	May 12 2021
File Name	\\192.168.7.14\mr\pererada\DP07-68-1-TFF-1_20210512_DP07-68-1-TFF-1_20210512_01\PROTON_02.fid.fid		
Frequency (MHz)	299.9009	Nucleus	¹ H
Number of Transients	32	Original Points Count	23969
Points Count	32768	Pulse Sequence	s2pul
Receiver Gain	18.00	SW(cyclical) (Hz)	4793.86
Solvent	METHANOL-d ₄	Spectrum Offset (Hz)	1799.3197
Spectrum Type	standard	Sweep Width (Hz)	4793.72
Temperature (degree C)	40.000		

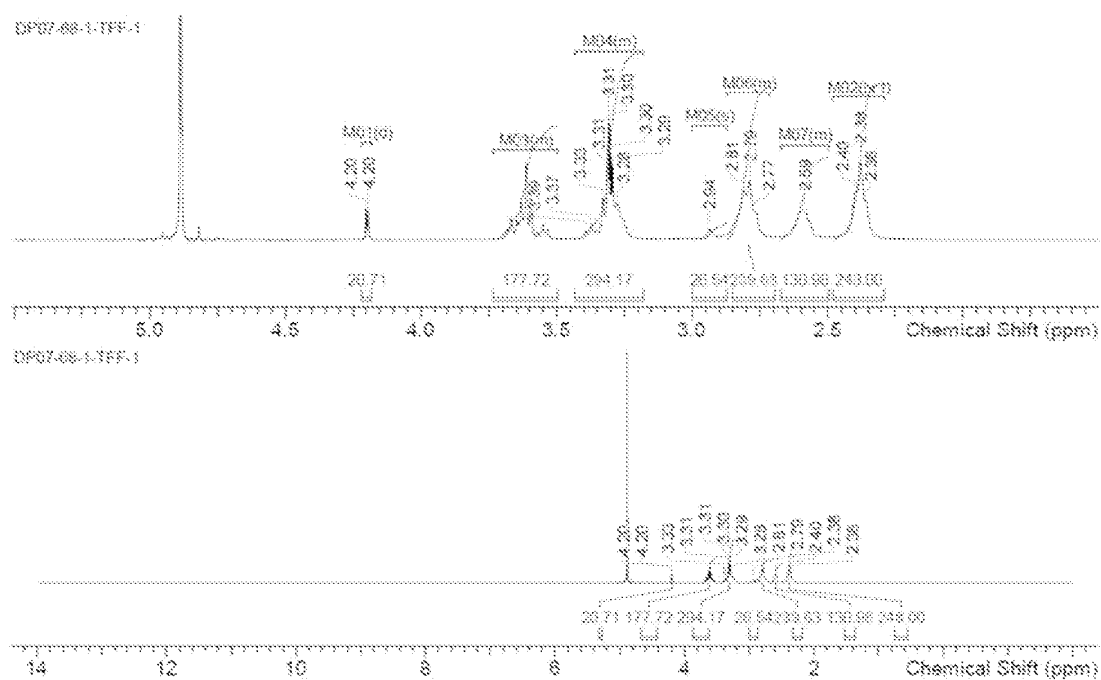


FIG. 38A

No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[2.29 .. 2.48]	248.000	2.134e+9	248.000
2	[2.50 .. 2.67]	130.976	1.127e+9	130.976
3	[2.71 .. 2.87]	239.628	2.062e+9	239.628
4	[2.87 .. 3.00]	26.537	2.284e+8	26.537
5	[3.18 .. 3.44]	294.171	2.532e+9	294.171
6	[3.49 .. 3.73]	177.723	1.529e+9	177.723
7	[4.18 .. 4.22]	20.710	1.782e+8	20.710

No.	(ppm)	(Hz)	Height
1	2.36	707.3	0.0413
2	2.38	713.4	0.0813
3	2.40	719.4	0.0509
4	2.59	775.3	0.0317
5	2.77	830.3	0.0315
6	2.79	836.2	0.0617
7	2.81	842.6	0.0513
8	2.94	880.8	0.0113
9	3.28	982.5	0.0397
10	3.29	987.6	0.0772
11	3.30	989.2	0.0893
12	3.30	990.8	0.1203

No.	(ppm)	(Hz)	Height
13	3.31	992.4	0.1290
14	3.31	994.0	0.0750
15	3.33	998.4	0.0444
16	3.36	1006.2	0.0097
17	3.37	1011.6	0.0161
18	3.39	1016.7	0.0104
19	4.20	1258.2	0.0339
20	4.20	1260.6	0.0333

FIG. 38B

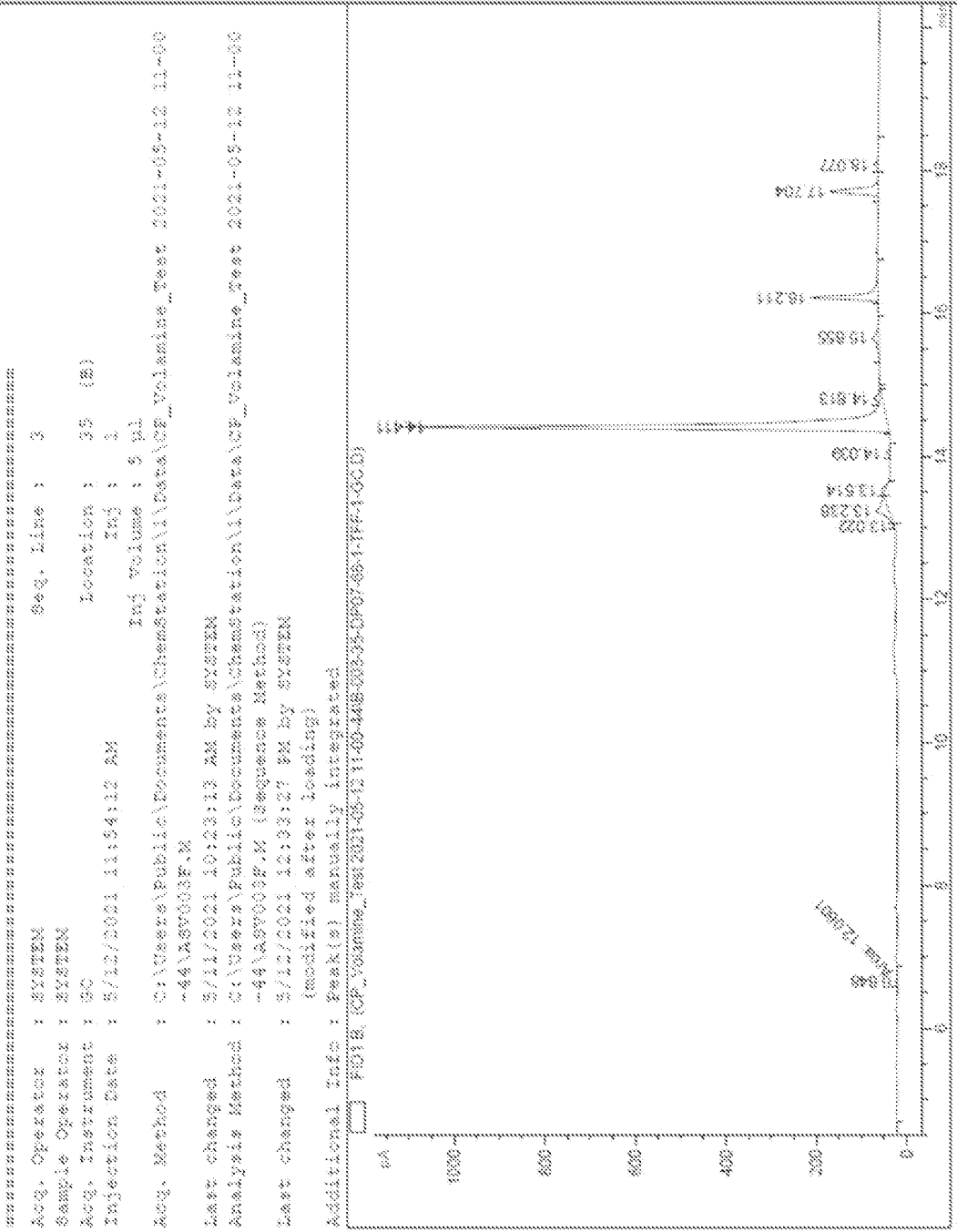


FIG. 39A

=====

Area Percent Report

=====

Sorted By : Signal

Multiplier : 1.0000

Dilution : 1.0000

Do not use Multiplier & Dilution Factor with IRTs

Signal 1: FID1 B,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %
1	1.755	BB	0.1573	2.68721e5	2.89440e4	13.03974
2	3.356	BV R	0.2492	1.79500e6	8.74343e4	86.61717
3	4.210	VB B	0.0762	51.27171	10.07088	0.00249
4	6.648	MX	0.0777	12.06015	2.56559	0.00059
5	13.022	BB	0.0367	7.72807	3.50405	0.00037
6	13.258	BB	0.1278	274.16119	26.09780	0.01330

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Height [pA]	Area %
7	13.514	BB	0.0751	27.82154	7.86471	0.00184
8	14.039	BB	0.0471	27.65565	8.68893	0.00134
9	14.411	BV R	0.0704	5214.94629	1078.48230	0.25306
10	14.813	VB B	0.0711	62.96714	12.43355	0.00306
11	15.655	BB	0.1206	126.25547	14.35916	0.00613
12	16.211	BB	0.0660	661.31195	148.44087	0.03209
13	17.704	BV	0.0763	535.09029	107.13071	0.02587
14	18.077	VB	0.0889	59.02578	9.73856	0.00287

Totals : 2.06079e6 1.17810e5

=====

Acquisition Time (sec)	4.9999	
Comment	AD11-53-1-DP07-82-2-Q	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\nmri\data\data\AD11-53-1-DP07-82-2-Q_20210611_AD11-53-1-DP07-82-2-Q_20210611_01\PROTON_01.fid\fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
SW(cyclical) (Hz)	4793.86	Solvent METHANOL-d4
Spectrum Offset (Hz)	1799.3197	Spectrum Type standard
Sweep Width (Hz)	4793.72	Temperature (degree C) 40.000

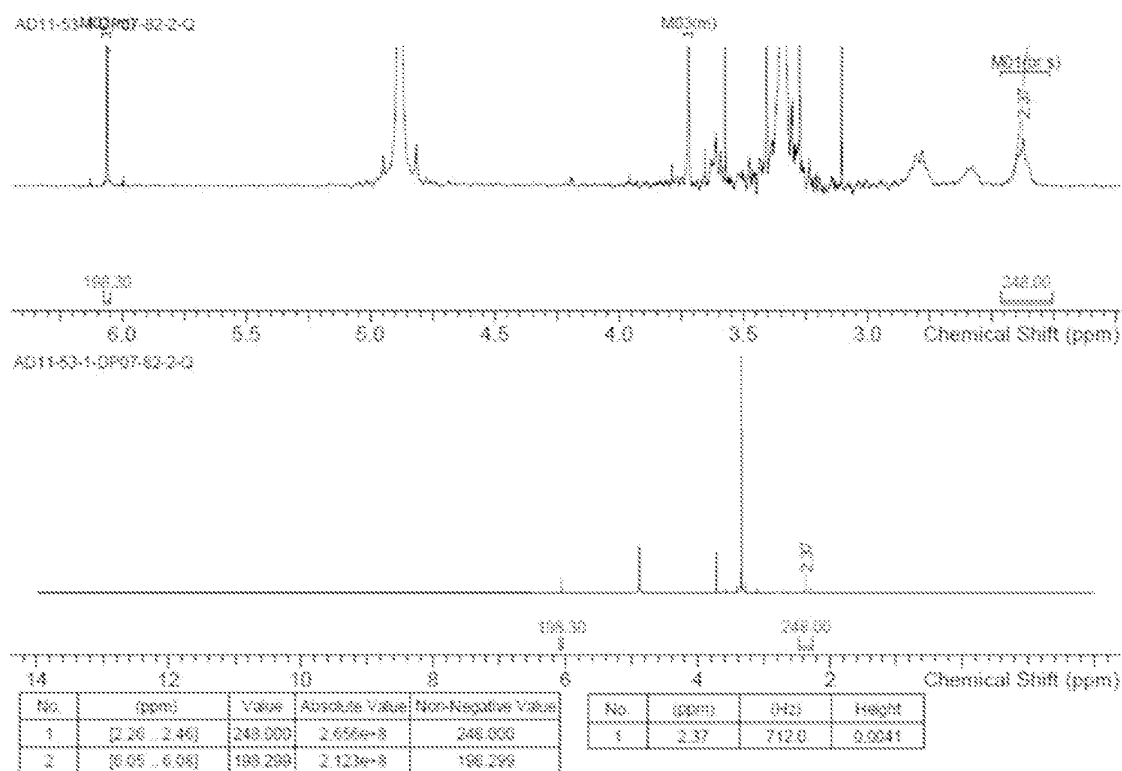


FIG. 40

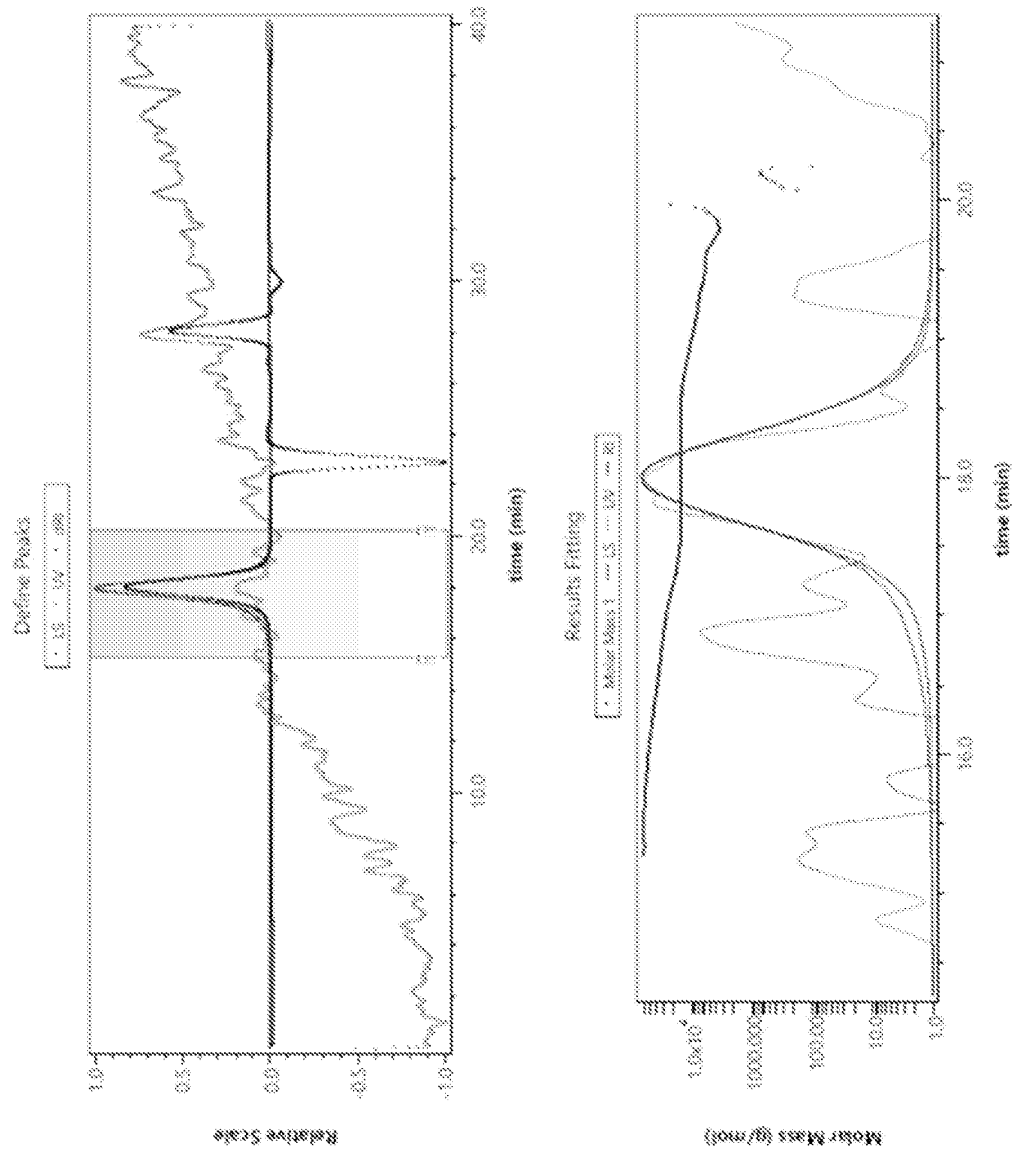


FIG. 41A

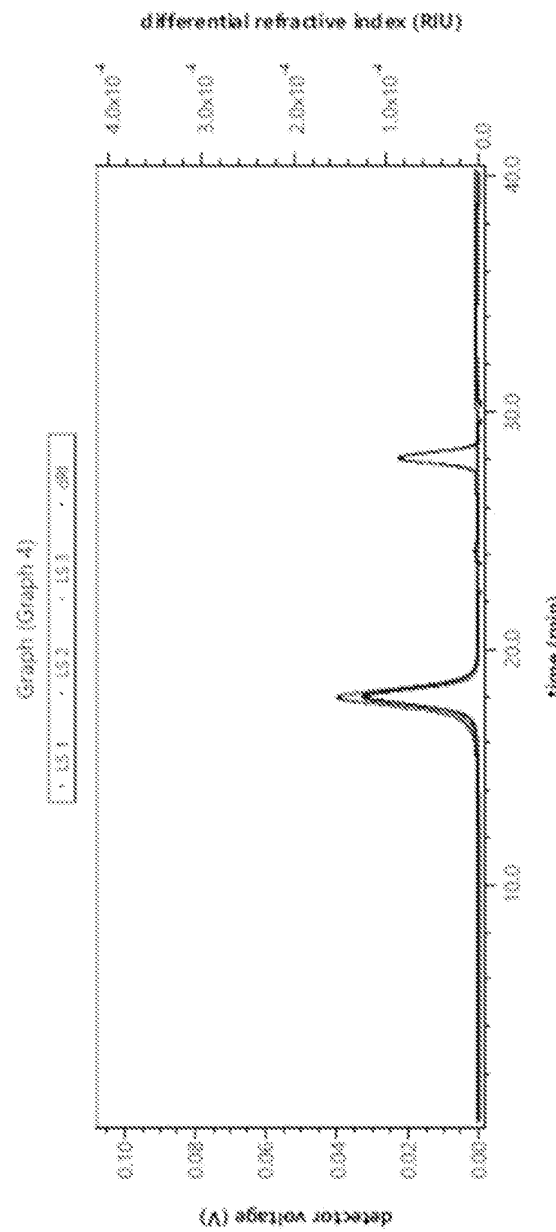
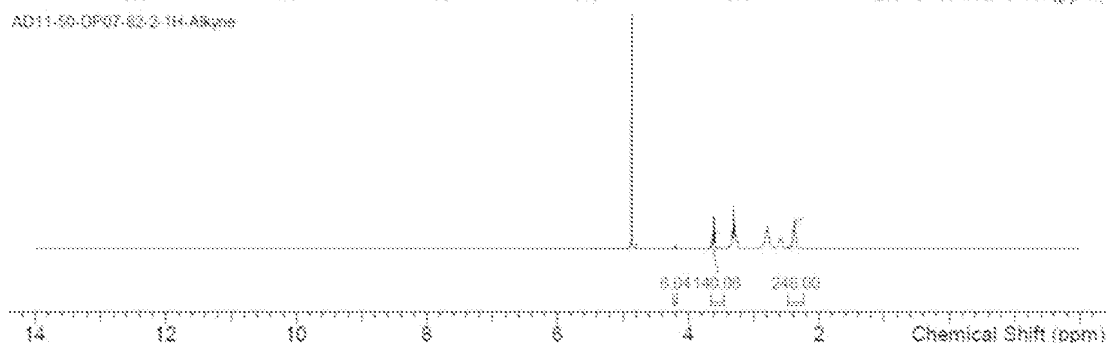
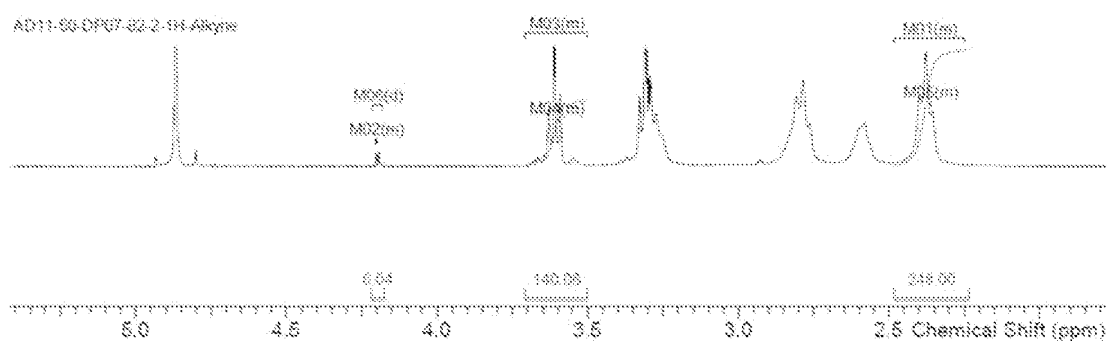


FIG. 41B

Configuration		
Flow Rate: 1.000 mL/min		
Light Scattering Instrument:		
Physical Instrument Name: miniDSCM		
RI Instrument:		
Physical Instrument Name: OptiLab		
UV Instrument:		
Channel Wavelength (nm) Response Factor (AU/%)		
1	210.0	1.000
2	0.0	1.000
3	0.0	1.000
4	0.0	1.000
Column:		
Description:		
Conventional Calibration Function: $K(DV) = 10^{(11.146428778 + 0.001795449 * 0.009700195616)}$		
Solvent: citric acid aqueous		
Description: 0.1M Citric acid buffer, pH5.74		
Processing		
Peak settings:		
Peak Limits (min)	15.000	60.000
Width (min)	0.000	
Results		
Peak Results		
Masses		
Peak 1		
Injected Mass (µg)	700.00	
Calculated Mass (µg)	811.00	
Molar mass moments (g/mol)		
Mn	1.880×10^4	(60.3844)
Mp	1.840×10^4	(60.0189)
Mw	1.810×10^4	(60.0000)
M(wgt)	1.870×10^4	(60.0000)
Polydispersity		
Mw/Mn	1.004	(60.0079)

FIG. 41C

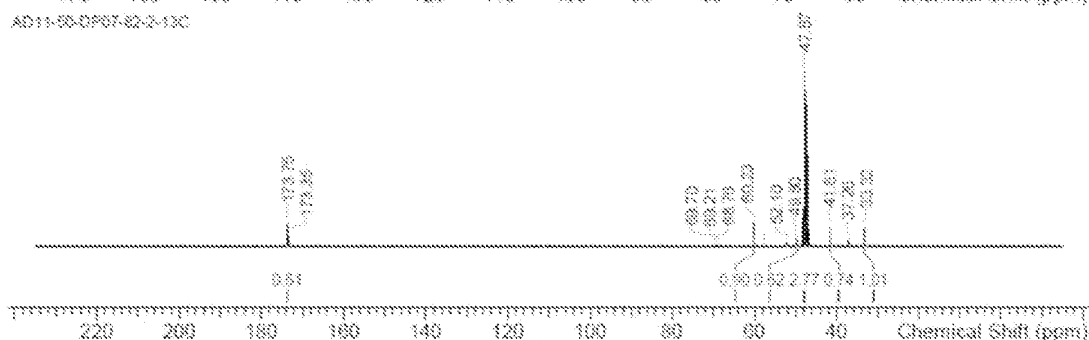
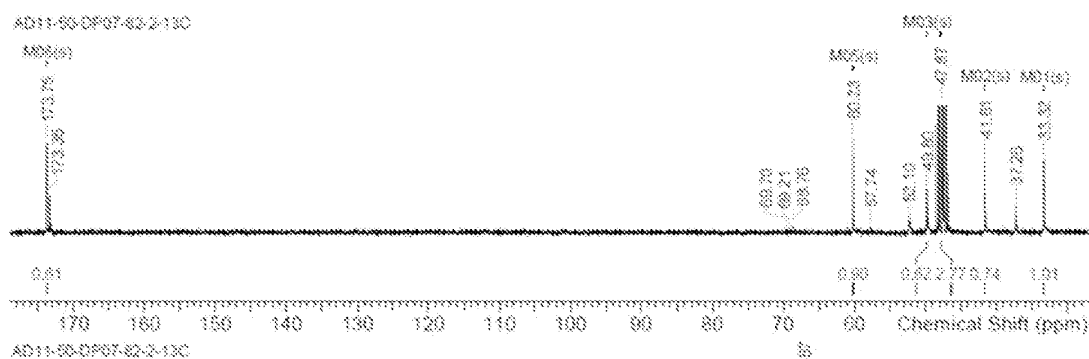
Acquisition Time (sec)	4.9999	
Comment	AD11-50-DP07-82-2-1H-Alkyne	
Date	Jun 10 2021	Date Stamp Jun 10 2021
File Name	\\192.168.7.14\mhadatta\AD11-50-DP07-82-2-1H-Alkyne_20210610_\AD11-50-DP07-82-2-1H-Alkyne_20210610_01\PROTON_01.fid\fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
Receiver Gain	14.00	SW(cyclical) (Hz) 4793.85
Solvent	METHANOL-d4	Spectrum Offset (Hz) 1799.3197
Spectrum Type	standard	Sweep Width (Hz) 4793.72
Temperature (degree C)	40.000	



No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[2.24 .. 2.48]	248.000	1.374e+6	248.000
2	[3.50 .. 3.71]	140.080	1.056e+6	140.080
3	[4.18 .. 4.22]	6.036	4.562e+7	6.036

FIG. 42

Acquisition Time (sec)	0.8684	
Comment	AD11-50-DP07-82-2-13C	
Date	Jun 10 2021	Date Stamp Jun 10 2021
File Name	\\192.168.7.14\mri\data\AD11-50-DP07-82-2-13C_20210610_AD11-50-DP07-82-2-13C_20210610_01\CARBON_01.fid.fid	
Frequency (MHz)	75.4180	Nucleus ¹³ C
Number of Transients	2048	Original Points Count 16384
Points Count	16384	Pulse Sequence s2pul
Receiver Gain	30.00	SW(cyclical) (Hz) 18867.92
Solvent	METHANOL-d4	Spectrum Offset (Hz) 8295.0703
Spectrum Type	standard	Sweep Width (Hz) 18867.92
Temperature (degree C)	40.000	



No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[33.26 ... 33.36]	1.005	1.815e+9	1.005
2	[41.67 ... 41.69]	0.744	1.344e+9	0.744
3	[47.64 ... 47.61]	2.771	5.004e+9	2.771
4	[59.75 ... 49.64]	0.620	1.129e+9	0.620
5	[60.18 ... 60.27]	0.801	1.627e+9	0.801
6	[173.71 ... 173.75]	0.610	1.101e+9	0.610

No.	(ppm)	(Hz)	Height
1	33.32	2513.1	0.1110
2	37.26	2810.2	0.0432
3	41.61	3138.4	0.1133
4	47.67	3610.6	1.0000
5	49.60	3755.7	0.0658
6	52.10	3928.6	0.0172
7	57.74	4354.6	0.0086
8	60.23	4542.3	0.1423
9	68.75	5186.1	0.0120
10	68.21	5219.5	0.0064
11	69.70	5268.4	0.0046
12	173.36	13074.0	0.0065

No.	(ppm)	(Hz)	Height
13	173.75	13193.9	0.1056

FIG. 43

Acquisition Time (sec)	4.9999	
Comment	AD11-53-2-DP07-85-3-Q	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\lmradata\AD11-53-2-DP07-85-3-Q_20210611_AD11-53-2-DP07-85-3-Q_20210611_01\PROTON_01.fid.fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
SW(cyclical) (Hz)	4793.86	Solvent METHANOL-d4
Spectrum Offset (Hz)	1799.3197	Spectrum Type standard
Sweep Width (Hz)	4793.72	Temperature (degree C) 40.000

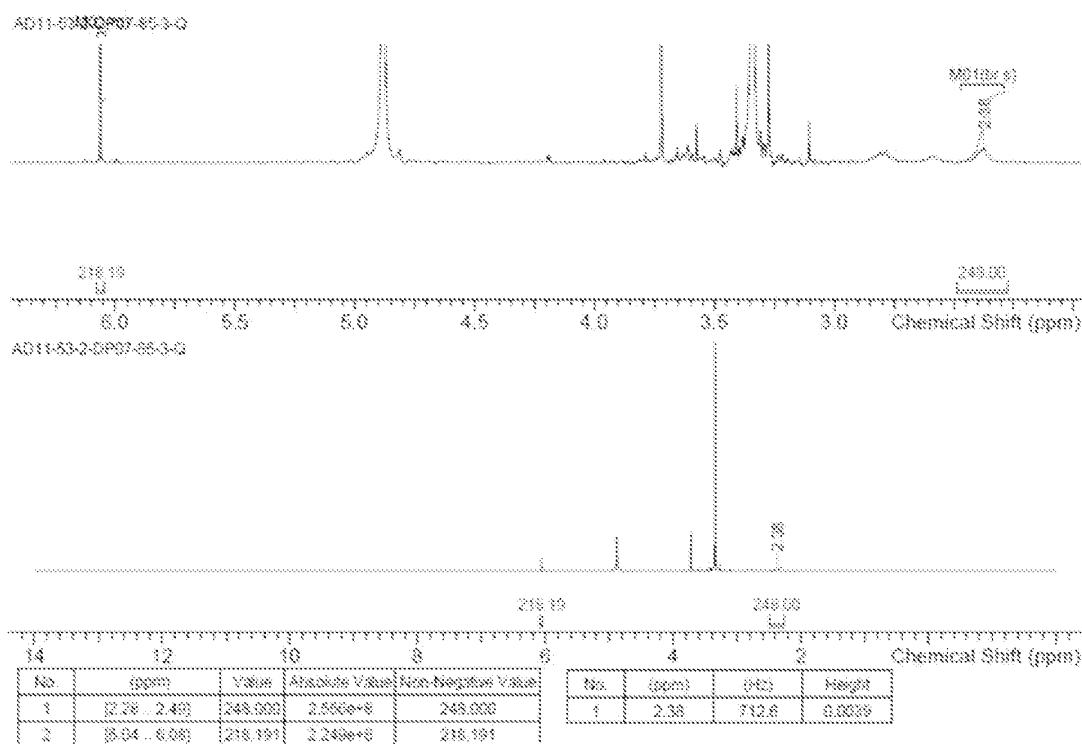


FIG. 44

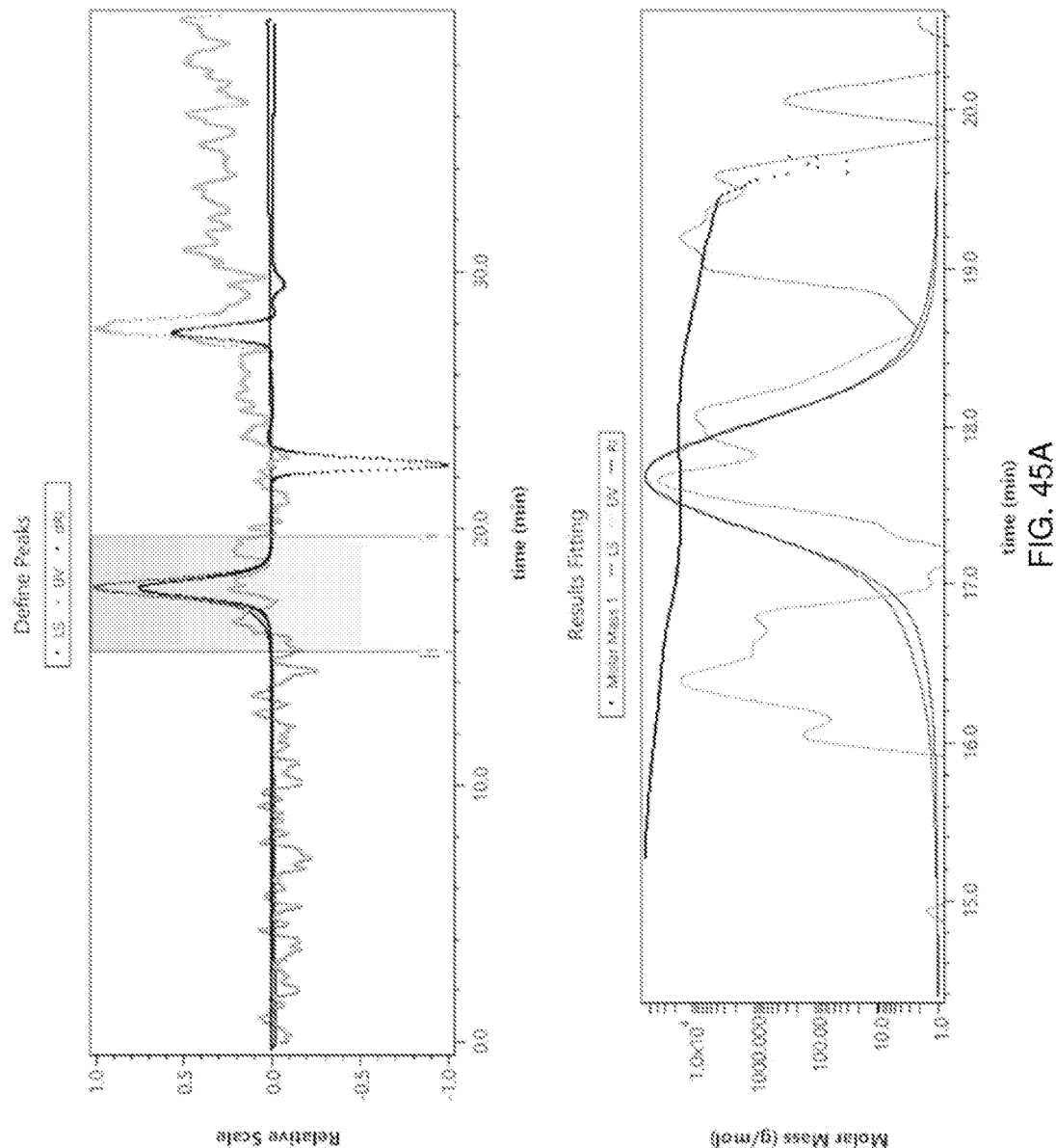


FIG. 45A

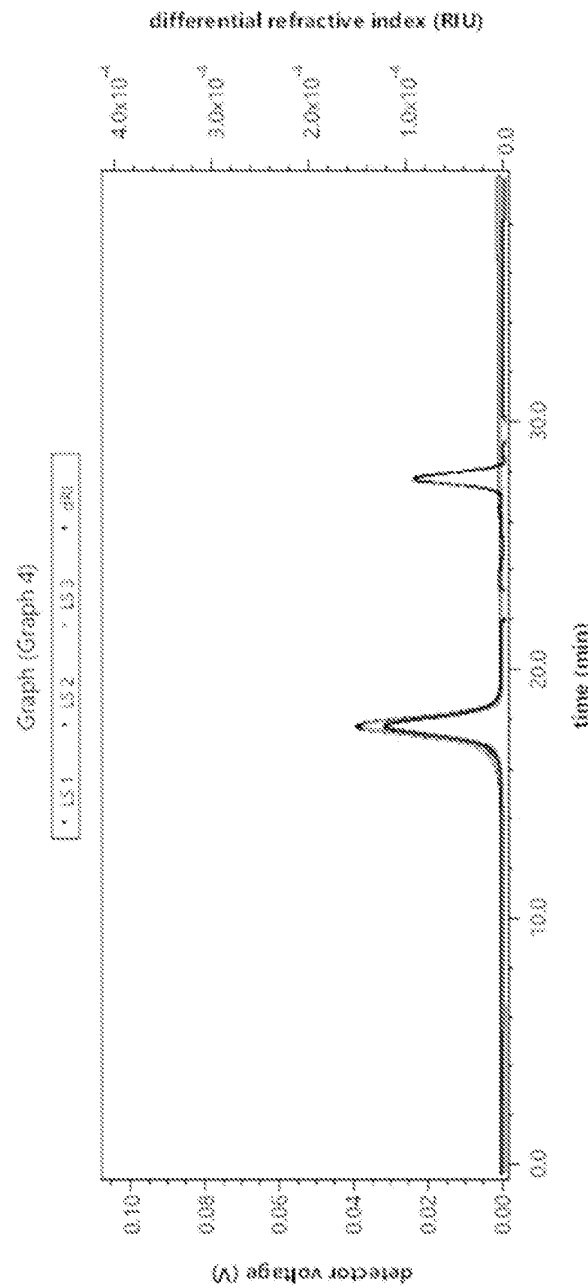


FIG. 45B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: miniDAOS	
RI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel Wavelength (nm) Response Factor (AU/V)	
14	219.0 1.000
2	0.0 1.000
3	0.0 1.000
4	0.0 1.000
Column:	
Description:	
Conventional Calibration Function: $M(V) = 10^6 (11.8662878 + 0.62827943V + 0.000976119V^2)$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH2.78	
Processing	
Peak settings:	
Peak Limits (min) 18.244 ~ 19.713	
dn/dc (mL/g) 0.5500	
Results	
Peak Results	Peak 1
Masses	
Injected Mass (pg)	700.00
Calculated Mass (pg)	878.88
Molar mass moments (g/mol)	
Mn	2.882×10^4 (20.2228)
Mp	2.576×10^4 (20.0188)
Mw	3.438×10^4 (20.0448)
M(wg)	3.692×10^4 (20.0028)
	Peak 1
Polydispersity	
Mw/Mn	1.032 (20.2228)

FIG. 45C

Acquisition Time (sec)	4.9999	
Comment	AD11-61-DP07-85-3-Alkyne_13C	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\mri\data\AD11-61-DP07-85-3-Alkyne_13C_20210611_1\AD11-61-DP07-85-3-Alkyne_13C_20210611_01\PROTON_01.fid.tif	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
Receiver Gain	14.00	SW(cyclical) (Hz) 4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz) 1799.3197
Spectrum Type	standard	Sweep Width (Hz) 4793.72
Temperature (degree C)	40.000	

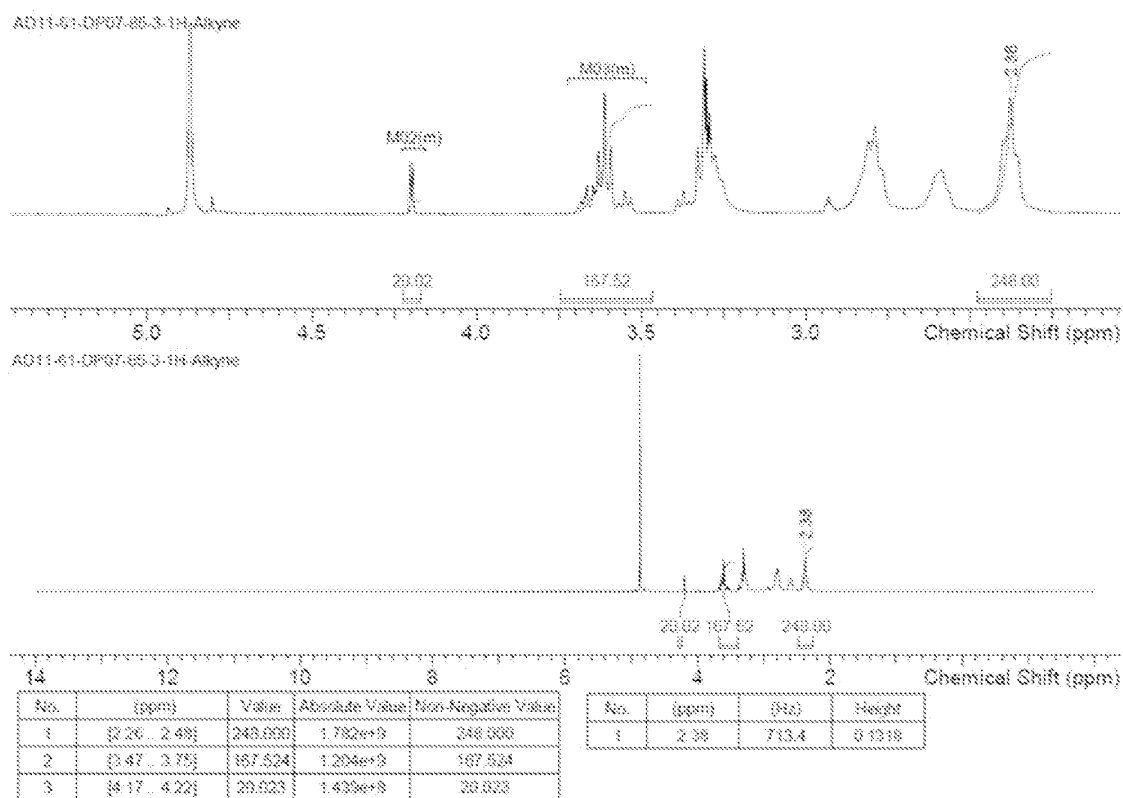
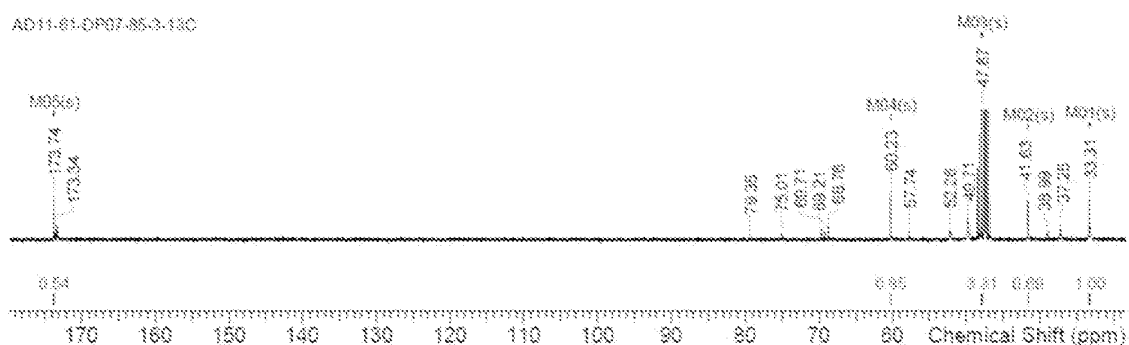


FIG. 46

Acquisition Time (sec)	0.8684	
Comment	AD11-61-DP07-85-3-Alkyne_13C	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\nmri\data\AD11-61-DP07-85-3-Alkyne_13C_20210611_1\AD11-61-DP07-85-3-Alkyne_13C_20210611_01\CARBON_01.fid.fid	
Frequency (MHz)	75.4180	Nucleus 13C
Number of Transients	2048	Original Points Count 16384
Points Count	16384	Pulse Sequence s2pul
Receiver Gain	30.00	SW(cyclical) (Hz) 18867.92
Solvent	METHANOL-d4	Spectrum Offset (Hz) 8295.0703
Spectrum Type	standard	Sweep Width (Hz) 18867.92
Temperature (degree C)	40.000	

AD11-61-DP07-85-3-13C



AD11-61-DP07-85-3-13C

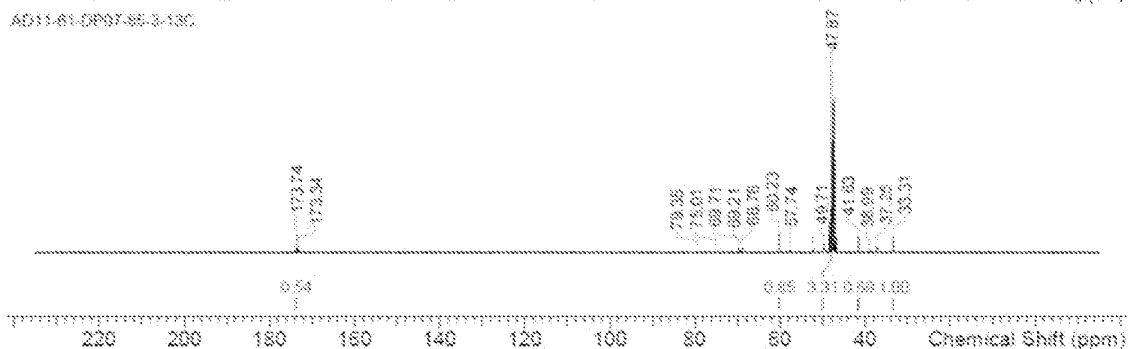


FIG. 47A

No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[33.27 ... 33.35]	1.000	1.524e+9	1.000
2	[41.59 ... 41.67]	0.686	1.046e+9	0.686
3	[47.84 ... 47.91]	3.312	5.047e+8	3.312
4	[60.19 ... 60.27]	0.646	1.289e+9	0.646
5	[173.70 ... 173.77]	0.539	8.214e+8	0.539

No.	(ppm)	(Hz)	Height
1	33.31	2511.9	0.0919
2	37.25	2809.1	0.0364
3	38.99	2940.3	0.0188
4	41.63	3138.6	0.0870
5	47.87	3610.6	1.0000
6	49.71	3748.8	0.0406
7	52.26	3941.2	0.0228
8	57.74	4354.6	0.0238
9	60.23	4542.3	0.1087
10	68.76	5186.1	0.0245
11	69.21	5219.6	0.0190
12	69.71	5257.5	0.0255

No.	(ppm)	(Hz)	Height
13	75.01	5657.2	0.0154
14	79.35	5984.2	0.0093
15	173.34	13072.8	0.0319
16	173.74	13102.7	0.0961

FIG. 47B

Acquisition Time (sec)	4.9999	
Comment	AD11-53-1-DP07-82-2-Q	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\mnadatta\AD11-53-1-DP07-82-2-Q_20210611_AD11-53-1-DP07-82-2-Q_20210611_01\PROTON_01.fid\fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
SW(cyclical) (Hz)	4793.86	Solvent METHANOL-d4
Spectrum Offset (Hz)	1799.3197	Spectrum Type standard
Sweep Width (Hz)	4793.72	Temperature (degree C) 40.000

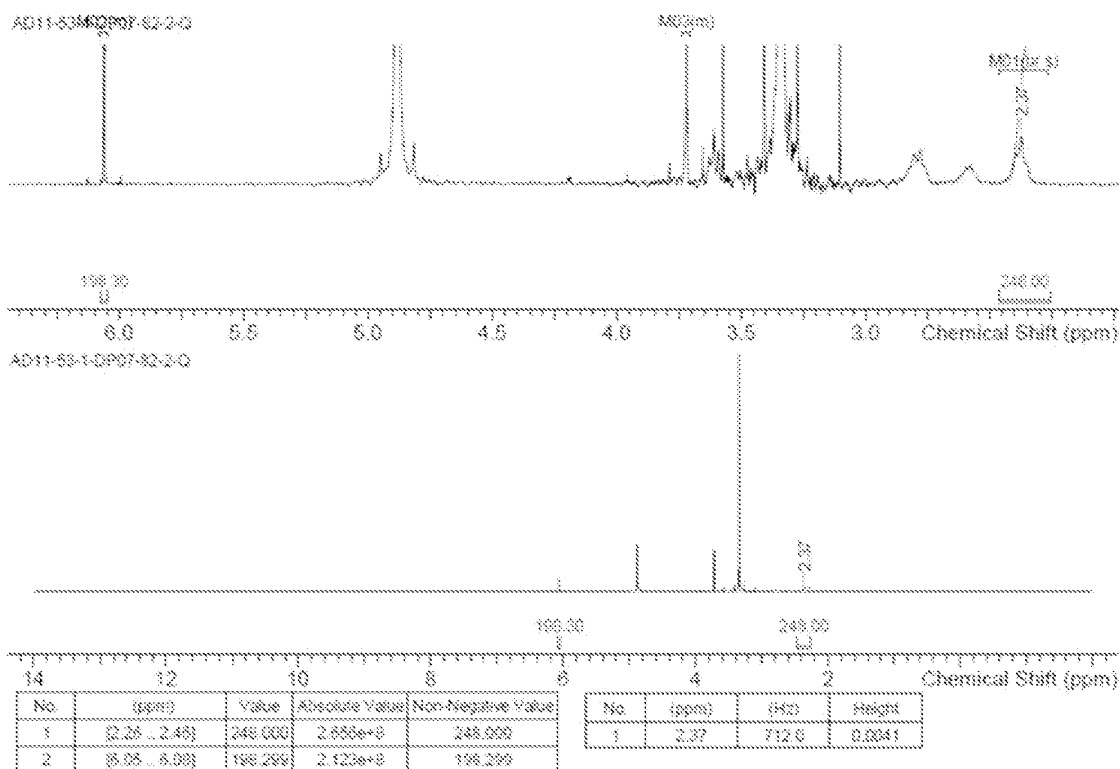


FIG. 48

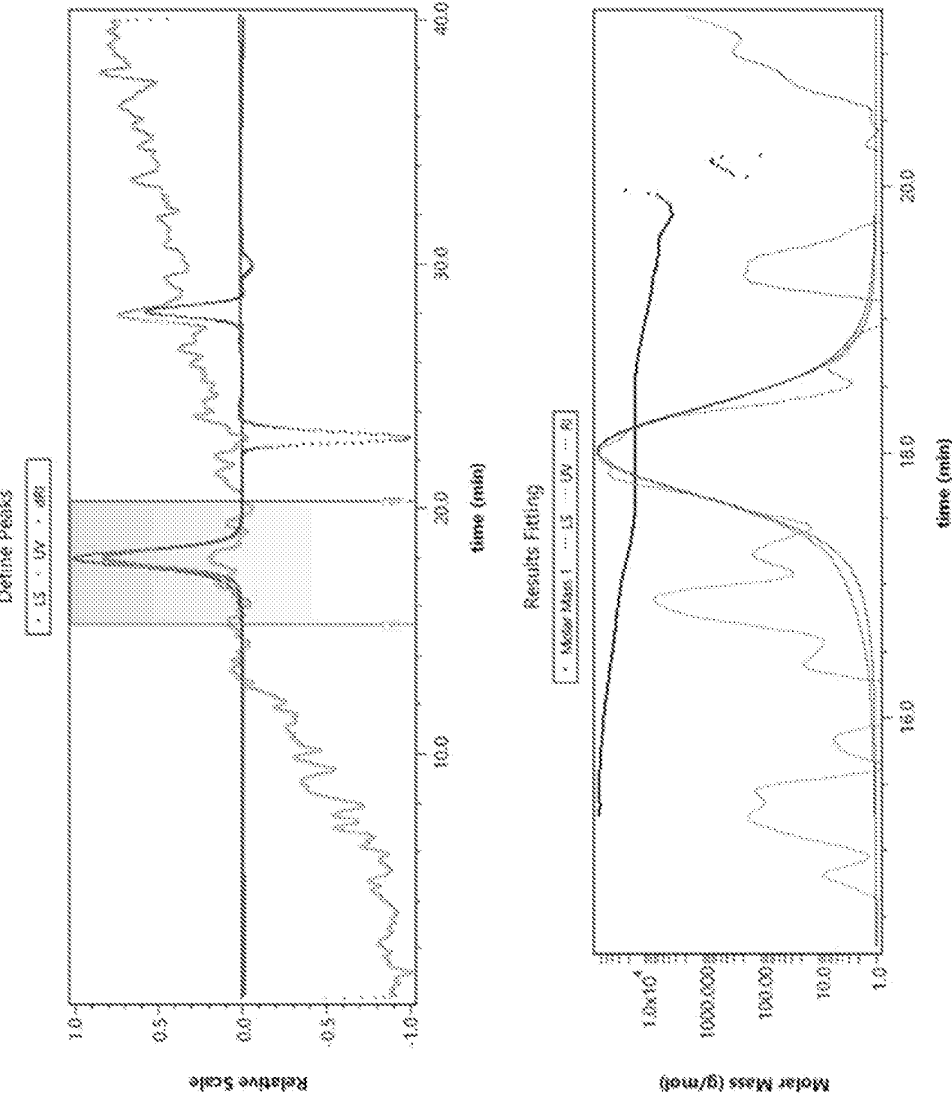


FIG. 49A

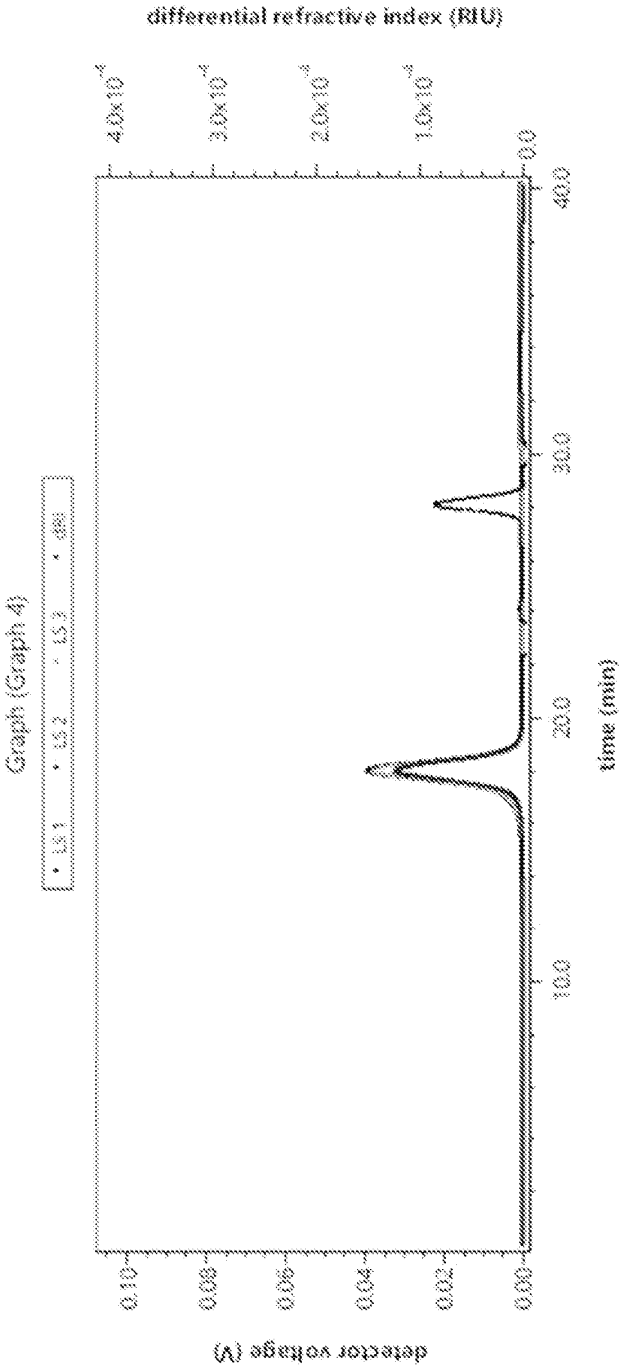


FIG. 49B

Configuration		
Flow Rate: 1.000 mL/min		
Light Scattering Instrument:		
Physical Instrument Name: HX500000		
RI Instrument:		
Physical Instrument Name: OptiLab		
UV Instrument:		
Channel Wavelength (nm) Response Factor (AUW)		
1	210.0	1.000
2	0.0	1.000
3	0.0	1.000
4	0.0	1.000
Column:		
Description:		
Conventional Calibration Function: $S(v) = 10^4 (11.4641879 + 0.42810041v + 0.0007611391v^2)$		
Solvents: citric acid, aqueous		
Description: 0.1M Citric acid buffer, pH2.74		
Processing		
Peak settings:		
Peak Limits (min) 15.000 - 20.000		
dwidth (mL/g) 0.000		
Results		
Peak Results		
Masses		
Peak 1		
Injected Mass (ug) 708.00		
Calculated Mass (ug) 561.82		
Molar mass moments (g/mol)		
Mn	1.56E+04	(20.0348)
Mp	1.54E+04	(20.0133)
Mw	1.80E+04	(20.0458)
Mavg	1.81E+04	(20.0536)
Polydispersity		
Peak 1		
Mw/Mn		
1.034 (#0.3378)		

FIG. 49C

Acquisition Time (sec)	4.9999	
Comment	AD11-50-DP07-82-2-1H-Alkyne	
Date	Jun 10 2021	Date Stamp Jun 10 2021
File Name	\\192.168.7.14\mrdata\AD11-50-DP07-82-2-1H-Alkyne_20210610_\AD11-50-DP07-82-2-1H-Alkyne_20210610_01\PROTON_01.fid.fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
Receiver Gain	14.00	SW(cyclical) (Hz) 4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz) 1799.3197
Spectrum Type	standard	Sweep Width (Hz) 4793.72
Temperature (degree C)	40.000	

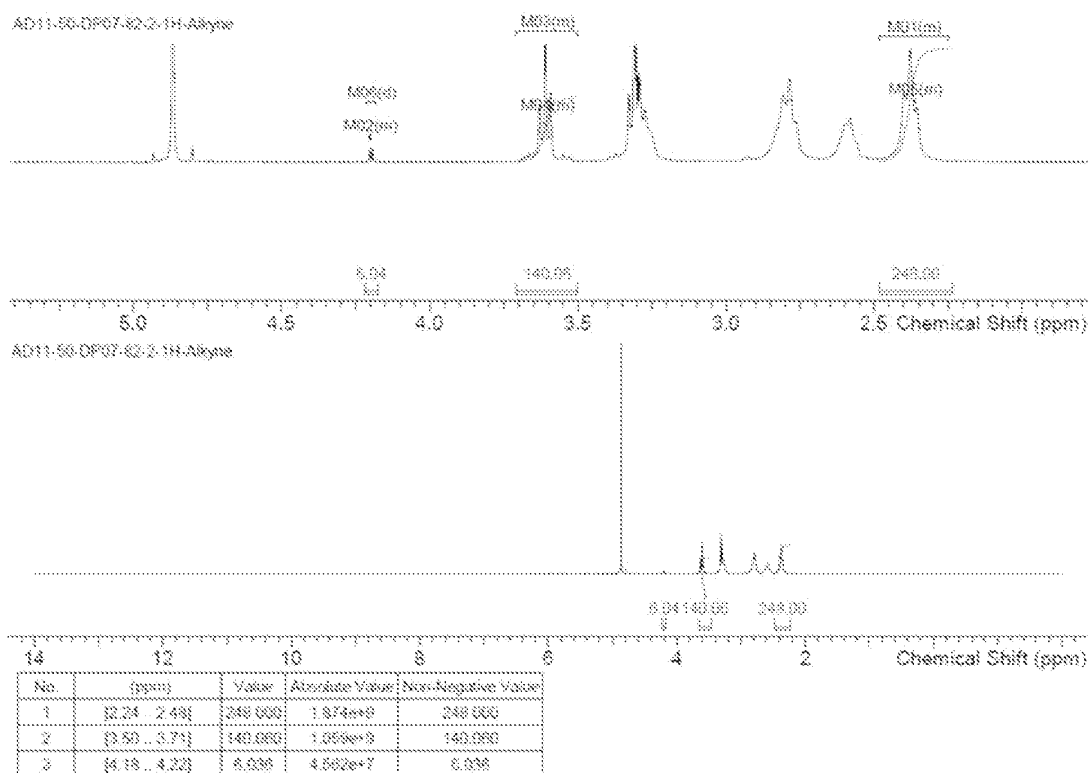


FIG. 50

Acquisition Time (sec)	0.8684	
Comment	AD11-50-DP07-82-2-13C	
Date	Jun 10 2021	Date Stamp Jun 10 2021
File Name	\\192.168.7.14\hmr\data\AD11-50-DP07-82-2-13C_20210610_AD11-50-DP07-82-2-13C_20210610_01\CARBON_01.fid.fid	
Frequency (MHz)	75.4180	Nucleus ¹³ C
Number of Transients	2048	Original Points Count 16384
Points Count	16384	Pulse Sequence s2pul
Receiver Gain	30.00	SW(cyclical) (Hz) 18867.92
Solvent	METHANOL-d4	Spectrum Offset (Hz) 8295.0703
Spectrum Type	standard	Sweep Width (Hz) 18867.92
Temperature (degree C)	40.000	

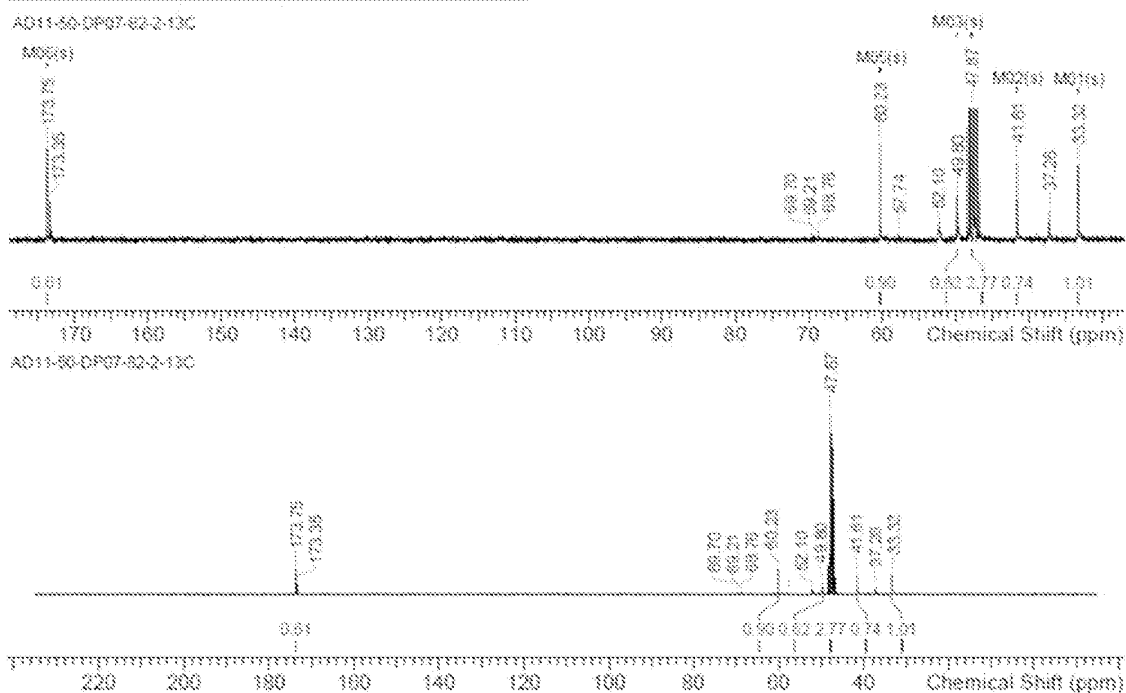


FIG. 51A

No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[33.28 ... 33.36]	1.005	1.815e+9	1.005
2	[41.57 ... 41.65]	0.744	1.344e+9	0.744
3	[47.84 ... 47.91]	2.771	5.004e+9	2.771
4	[49.76 ... 49.84]	0.623	1.125e+9	0.623
5	[60.19 ... 60.27]	0.901	1.627e+9	0.901
6	[173.71 ... 173.79]	0.610	1.101e+9	0.610

No.	(ppm)	(Hz)	Height
1	33.32	2513.1	0.1110
2	37.26	2810.2	0.0432
3	41.61	3139.4	0.1133
4	47.87	3610.6	1.0000
5	49.80	3755.7	0.0656
6	52.10	3929.6	0.0173
7	57.74	4354.8	0.0090
8	60.23	4542.3	0.1423
9	68.76	5196.1	0.0120
10	69.21	5219.5	0.0066
11	69.70	5255.4	0.0096
12	173.35	13074.0	0.0565
No.	(ppm)	(Hz)	Height
13	173.75	13183.9	0.1356

FIG. 51B

Acquisition Time (sec)	4.9999	
Comment	AD11-53-2-DP07-85-3-Q	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\nmr\data\AD11-53-2-DP07-85-3-Q_20210611_AD11-53-2-DP07-85-3-Q_20210611_01\PROTON_01.fid.fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23969
Points Count	32768	Pulse Sequence s2pul
SW(cyclical) (Hz)	4793.86	Solvent METHANOL-d4
Spectrum Offset (Hz)	1799.3197	Spectrum Type standard
Sweep Width (Hz)	4793.72	Temperature (degree C) 40.000

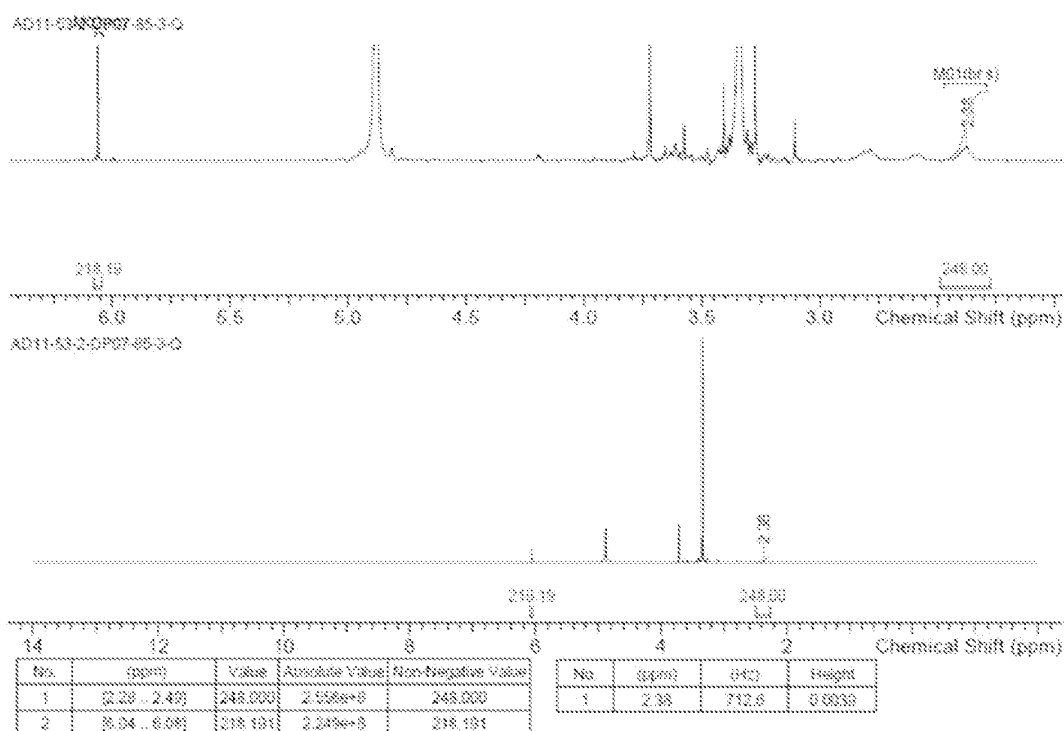


FIG. 52

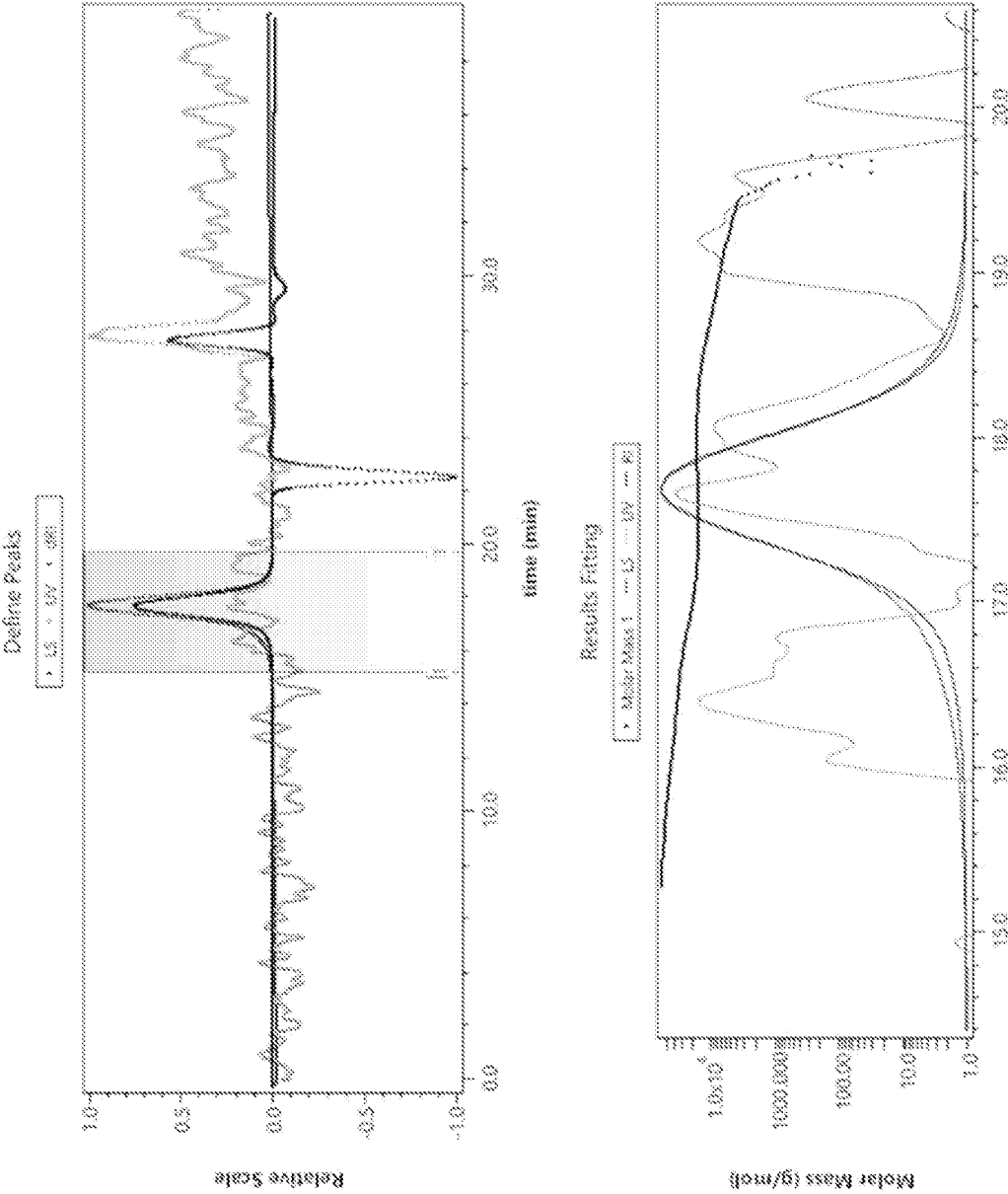


FIG. 53A

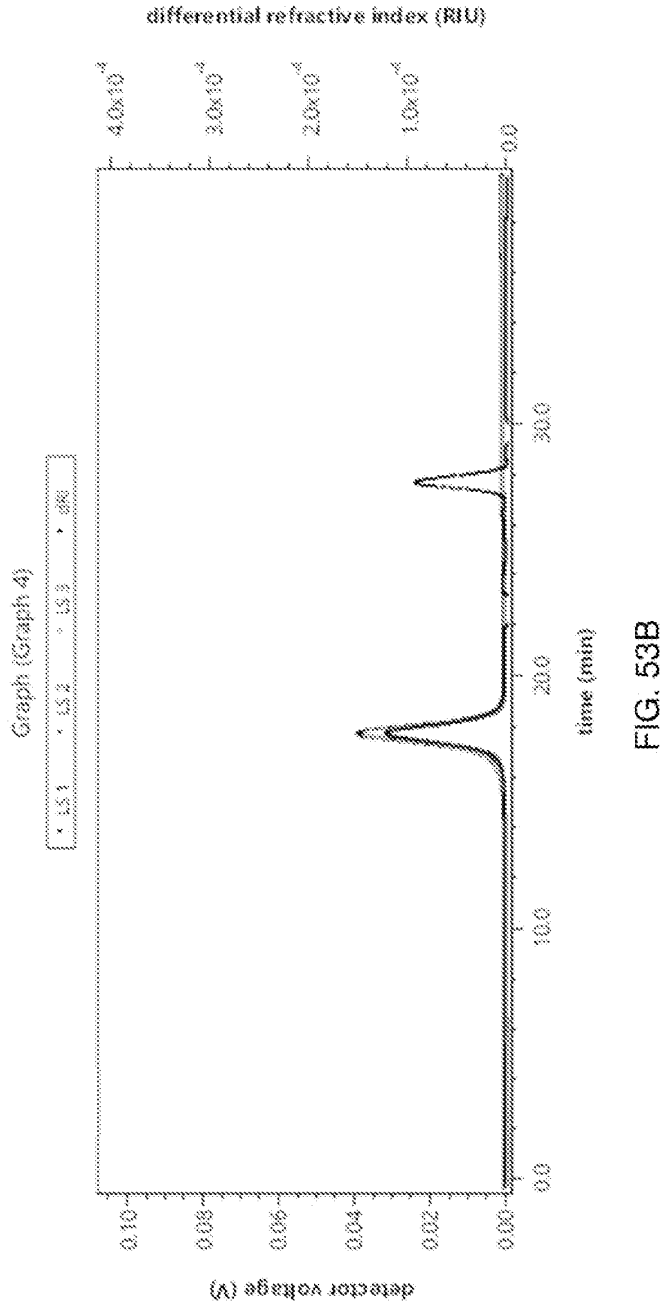


FIG. 53B

Configuration	
Flow Rate: 1.000 mL/min	
Light Scattering Instrument:	
Physical Instrument Name: m1013000	
BI Instrument:	
Physical Instrument Name: OptiLab	
UV Instrument:	
Channel Wavelength (nm) Response Factor (AU/V)	
1 210.0 1.000	
2 220.0 1.000	
3 230.0 1.000	
4 240.0 1.000	
Column:	
Description:	
Conventional Calibration Function: $N(V) = 10^{-5} (11.80616978 - 0.42629943V + 0.0037611991V^2)$	
Solvent: citric acid aqueous	
Description: 0.1M Citric acid buffer, pH2.74	
Processing	
Peak settings:	
Peak Limits (min)	18.284 - 18.713
dn/dc (mL/g)	0.2000
Results	
Peak Results	
Peak 1	
Masses	
Injected Mass (µg)	700.00
Calculated Mass (µg)	874.50
Molar mass moments (g/mol)	
Mn	1.582e+04 (±0.0236)
Mp	1.870e+04 (±0.0158)
Mw	1.703e+04 (±0.0488)
Mw/Mn	1.150e+00 (±0.0038)
Polydispersity	
Peak 1	
Mw/Mn	1.000 (±0.0268)

FIG. 53C

Acquisition Time (sec)	4.9999	
Comment	AD11-61-DP07-85-3-Alkyne_13C	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\inmri\data\AD11-61-DP07-85-3-Alkyne_13C_20210611_1\AD11-61-DP07-85-3-Alkyne_13C_20210611_01\PROTON_01.fid.fid	
Frequency (MHz)	299.9009	Nucleus 1H
Number of Transients	32	Original Points Count 23959
Points Count	32768	Pulse Sequence s2pul
Receiver Gain	14.00	SW(cyclical) (Hz) 4793.86
Solvent	METHANOL-d4	Spectrum Offset (Hz) 1799.3197
Spectrum Type	standard	Sweep Width (Hz) 4793.72
Temperature (degree C)	40.000	

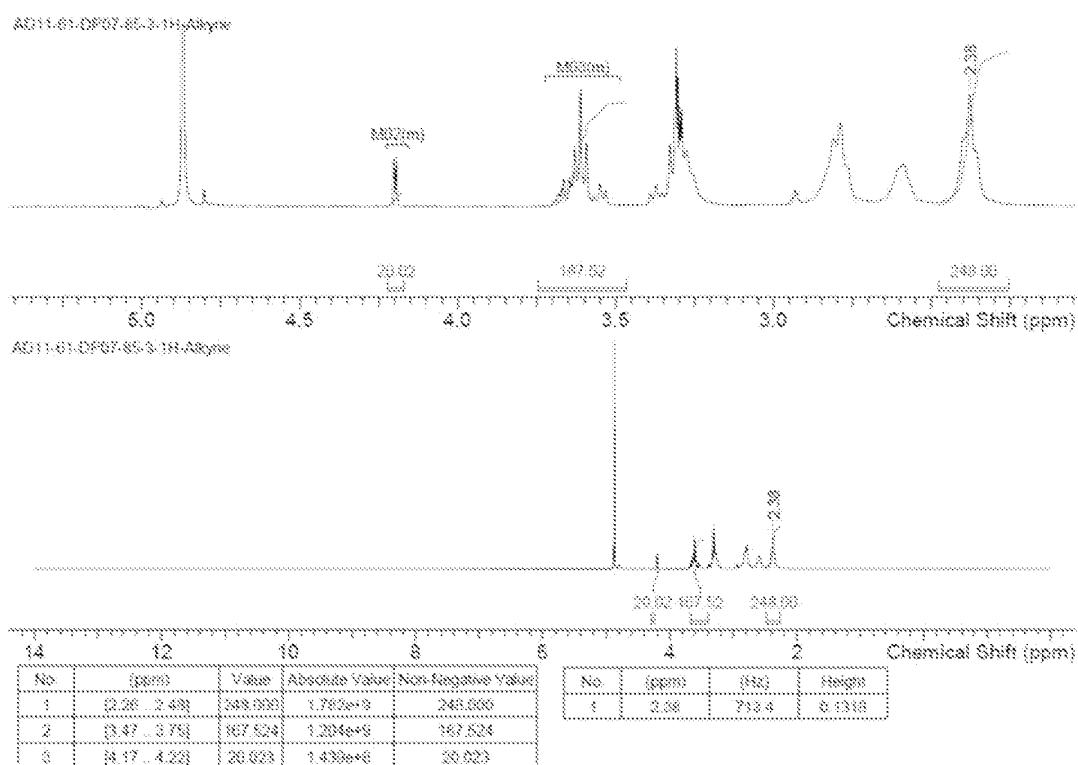


FIG. 54

Acquisition Time (sec)	0.8684	
Comment	AD11-61-DP07-85-3-Alkyne_13C	
Date	Jun 11 2021	Date Stamp Jun 11 2021
File Name	\\192.168.7.14\lmradatta\AD11-61-DP07-85-3-Alkyne_13C_20210611_1\AD11-61-DP07-85-3-Alkyne_13C_20210611_01\CARBON_01.fid.fid	
Frequency (MHz)	75.4180	Nucleus 13C
Number of Transients	2048	Original Points Count 16384
Points Count	16384	Pulse Sequence s2pul
Receiver Gain	30.00	SW(cyclical) (Hz) 18867.92
Solvent	METHANOL-d4	Spectrum Offset (Hz) 8295.0703
Spectrum Type	standard	Sweep Width (Hz) 18867.92
Temperature (degree C)	40.000	

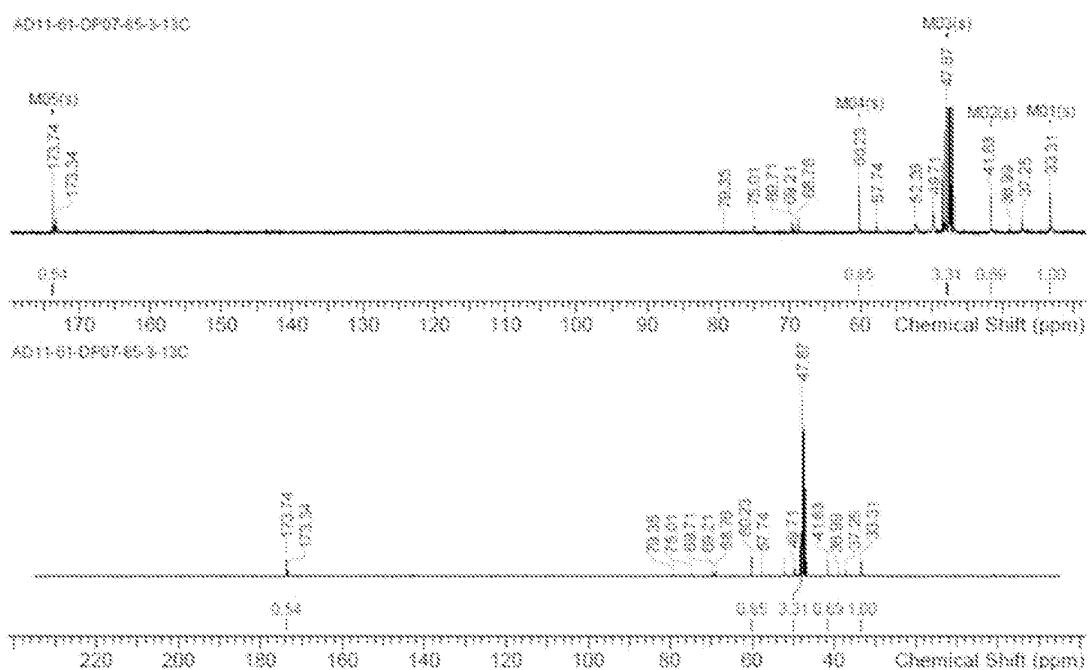


FIG. 55A

No.	(ppm)	Value	Absolute Value	Non-Negative Value
1	[33.27 .. 33.35]	1.000	1.524e+9	1.000
2	[41.59 .. 41.67]	0.686	1.046e+9	0.686
3	[47.84 .. 47.91]	3.312	5.047e+9	3.312
4	[60.19 .. 60.27]	0.846	1.269e+9	0.846
5	[173.70 .. 173.77]	0.538	8.214e+9	0.538

No.	(ppm)	(Hz)	Height
1	33.31	2511.9	0.0919
2	37.25	2899.1	0.0364
3	38.99	2940.3	0.0186
4	41.63	3139.8	0.0870
5	47.87	3610.6	1.0000
6	49.71	3748.8	0.0406
7	52.28	3941.2	0.0228
8	57.74	4354.6	0.0236
9	60.23	4542.3	0.1087
10	68.76	5186.1	0.0345
11	69.21	5219.5	0.0190
12	69.71	5257.5	0.0255

No.	(ppm)	(Hz)	Height
13	75.01	5657.2	0.0154
14	79.35	5984.2	0.0093
15	173.34	13072.8	0.0319
16	173.74	13102.7	0.0861

FIG. 55B

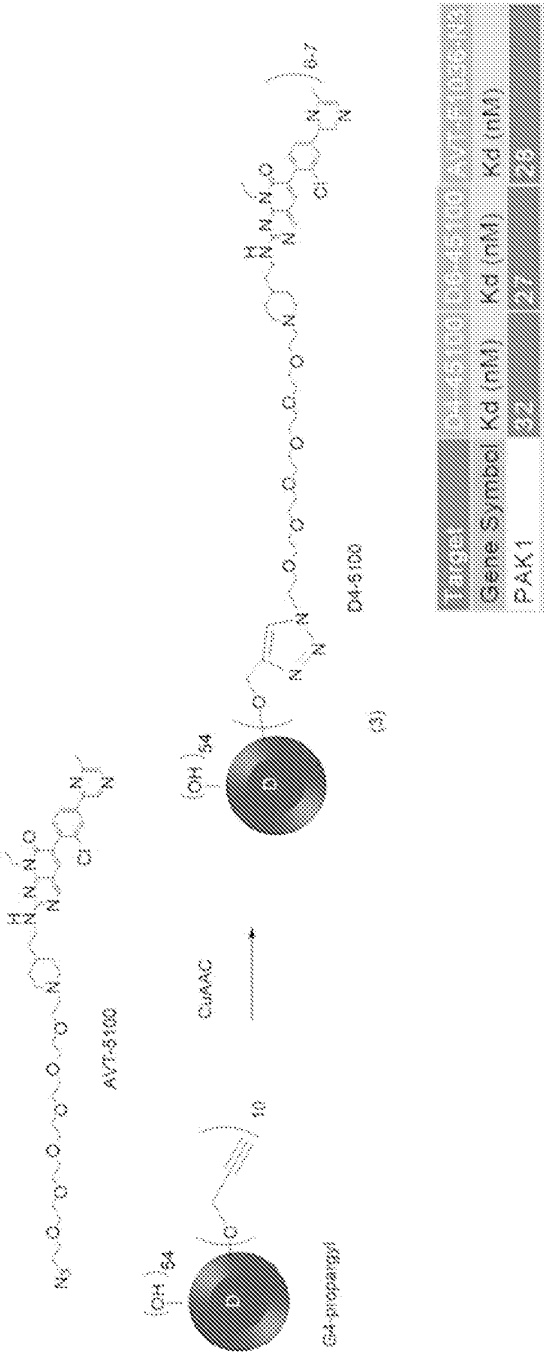
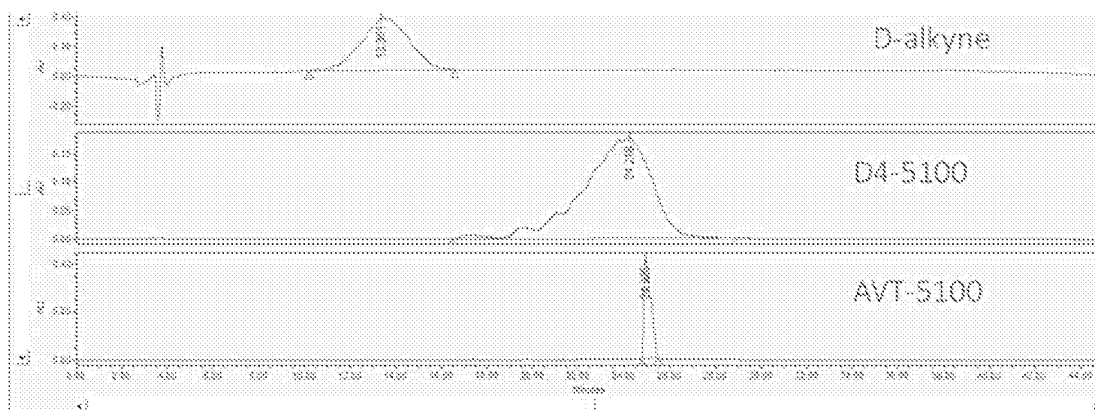


FIG. 56A

¹H NMR comparison of D4-5100 and intermediate



¹H NMR confirmed the attachment of 6 molecules
Loading: 15%

¹H NMR comparison of D4-5100 and intermediate

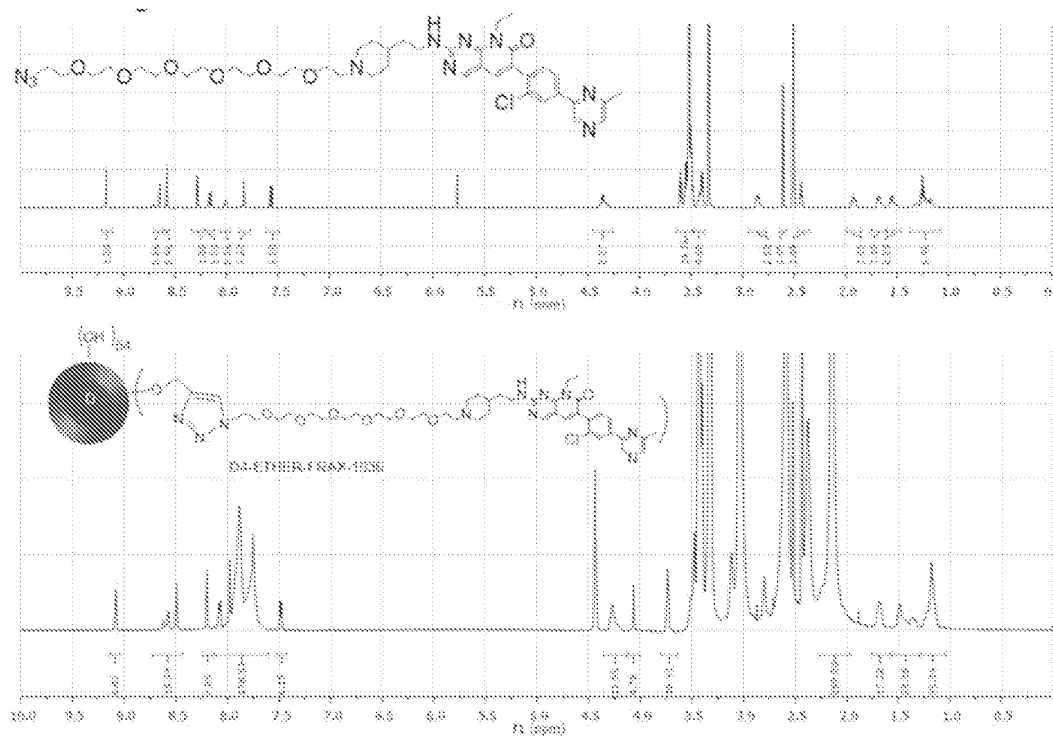


FIG. 56B

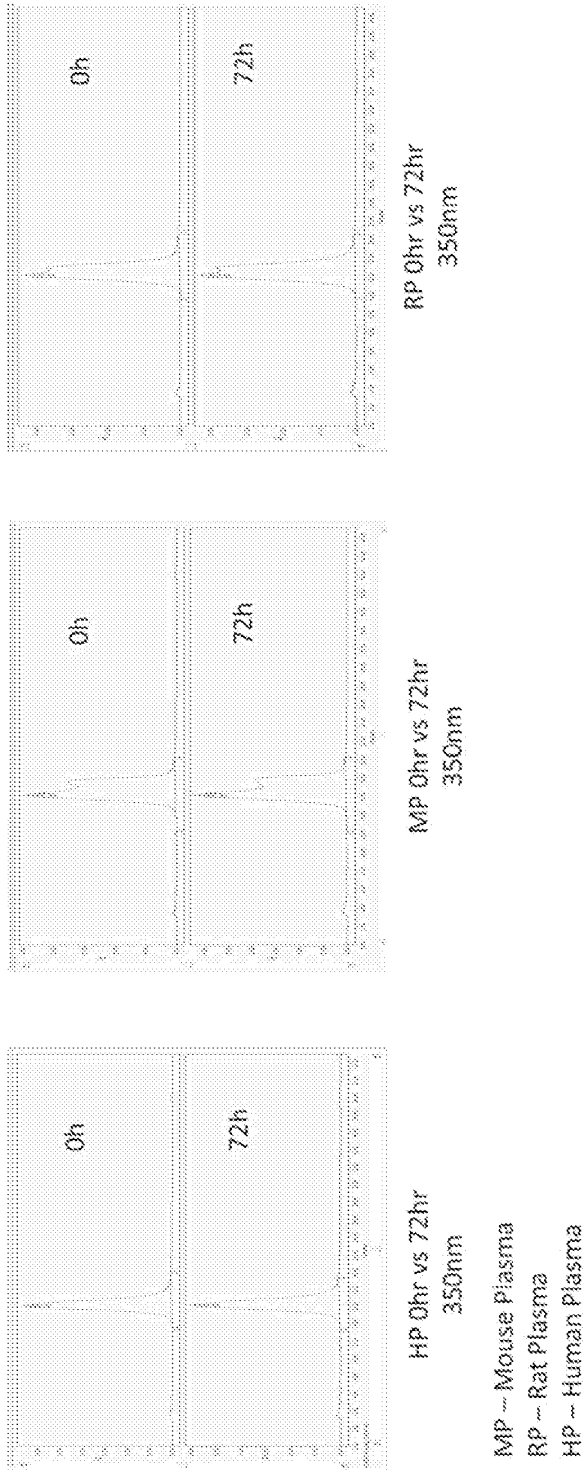


FIG. 56C

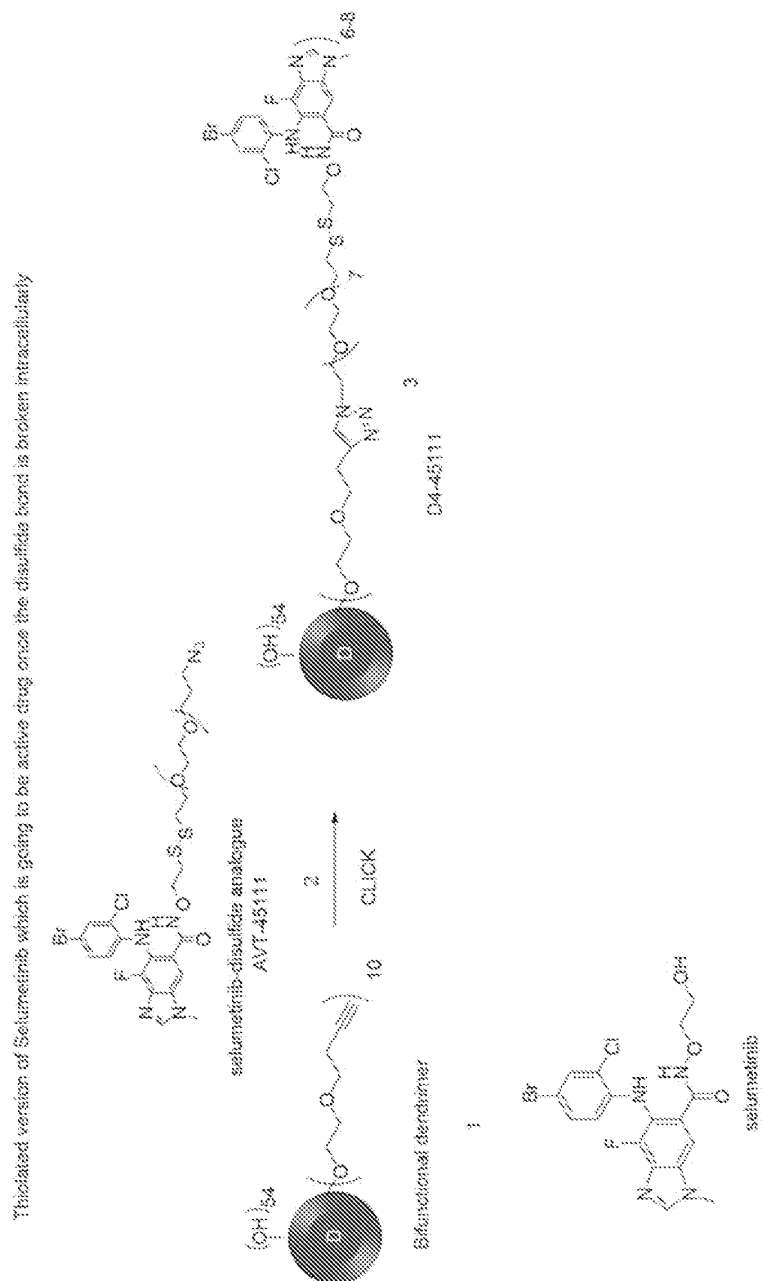


FIG. 57A

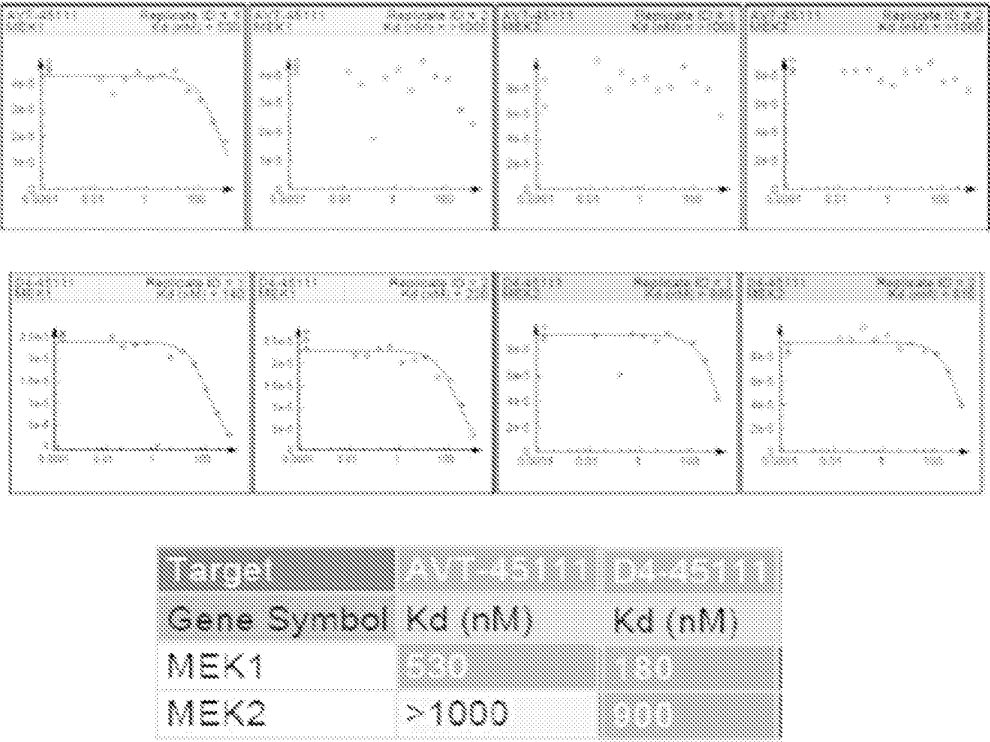
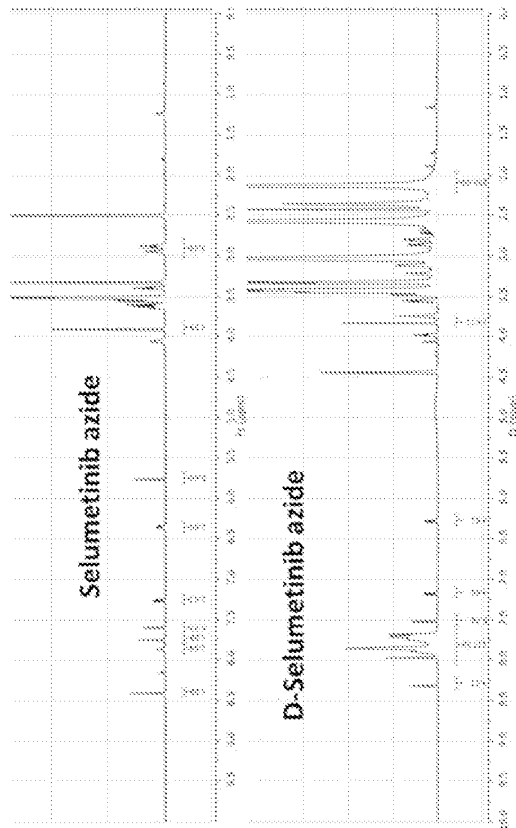
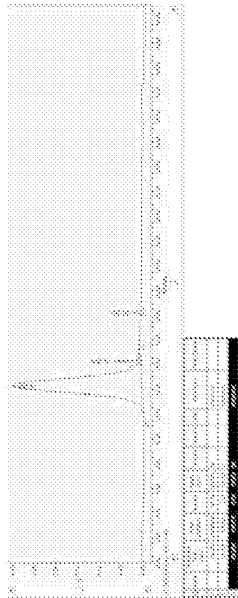


FIG. 57B

¹H NMR for D-selumetinib/D-5111



The drug loading with 5 molecules is 10.2% .



The D-selumetinib is >98% pure by HPLC.

FIG. 57C

D4-5111 release in Plasma

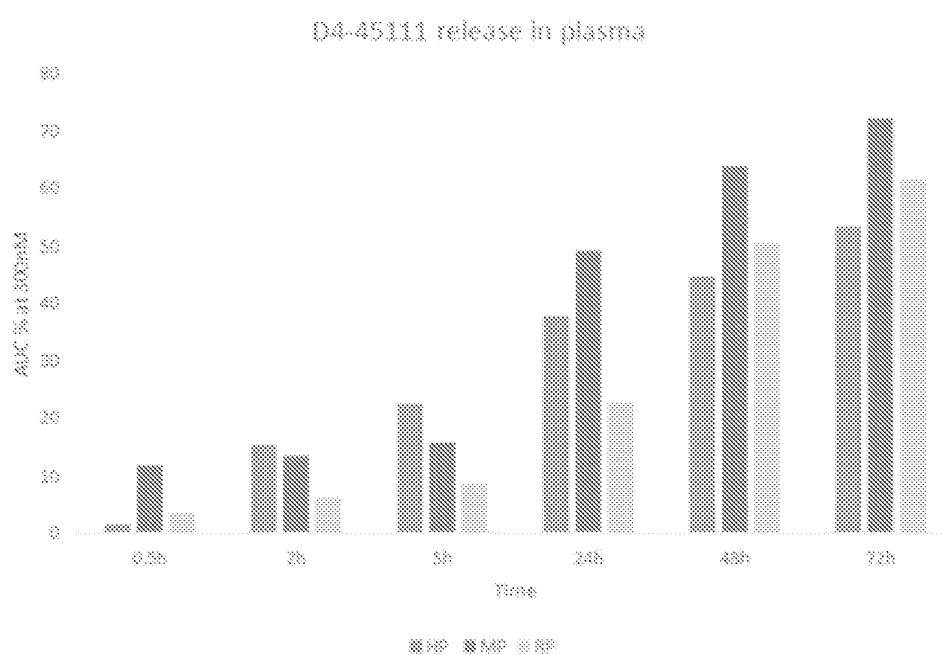


FIG. 57D

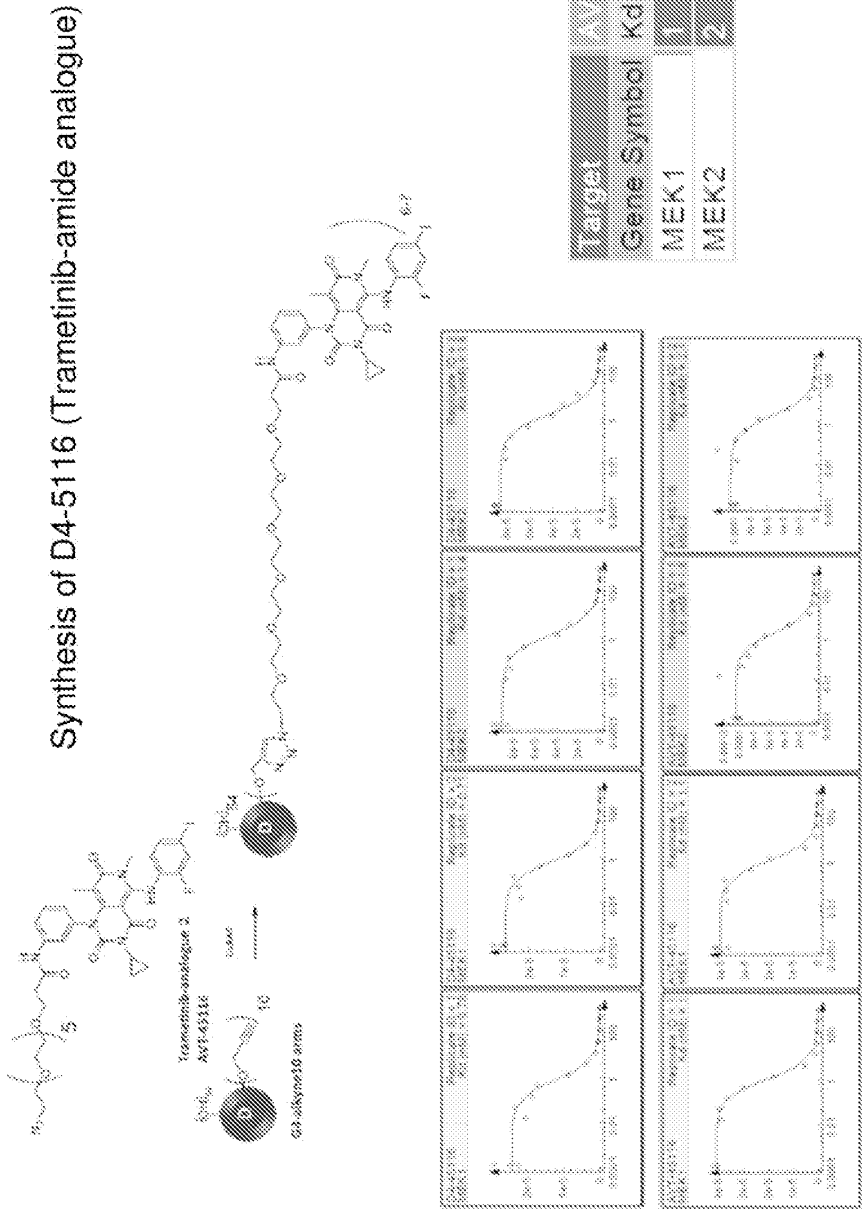
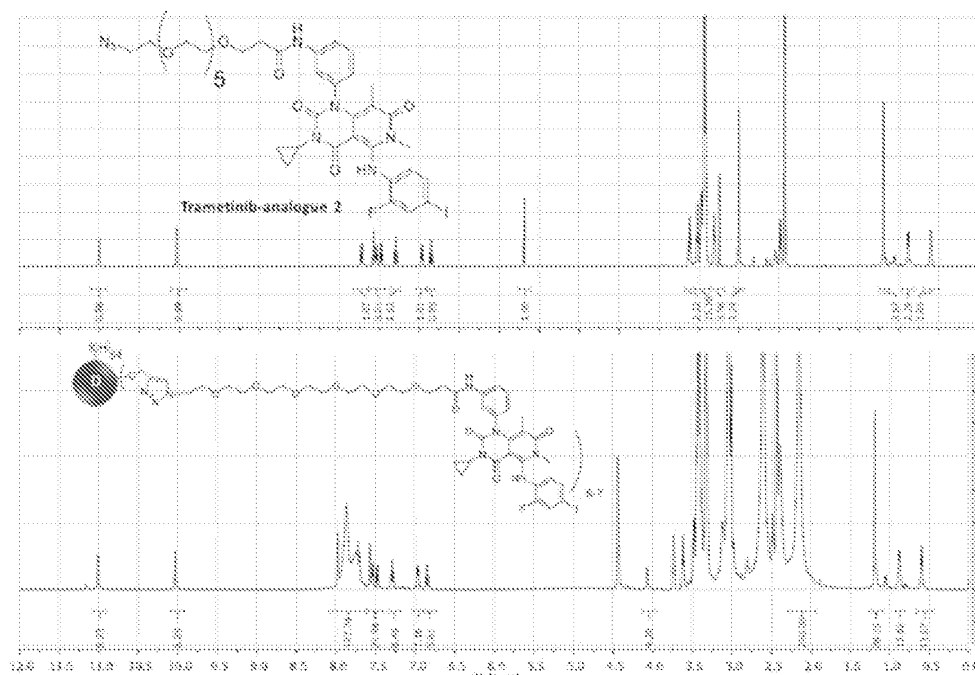
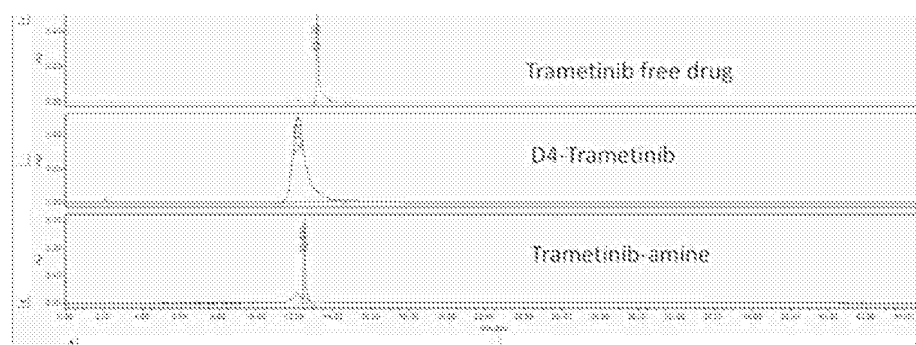


FIG. 57E

D4-Trametinib-analogue 2 (D4-5116)



HPLC comparison of the D4-trametinib and trametinib drug



The final conjugate is >99% pure by HPLC.

FIG. 57F

Stability evaluation of D4-5116

D4-45116 stability in plasma.

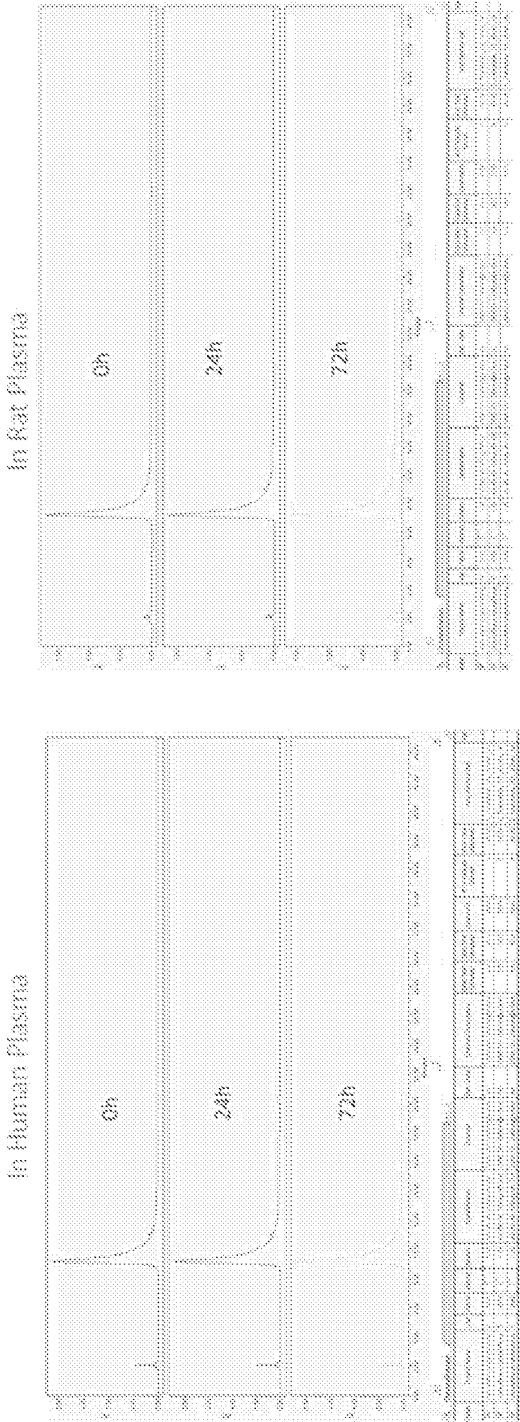


FIG. 57G

Stability evaluation of D4-5116 in presence of Esterase

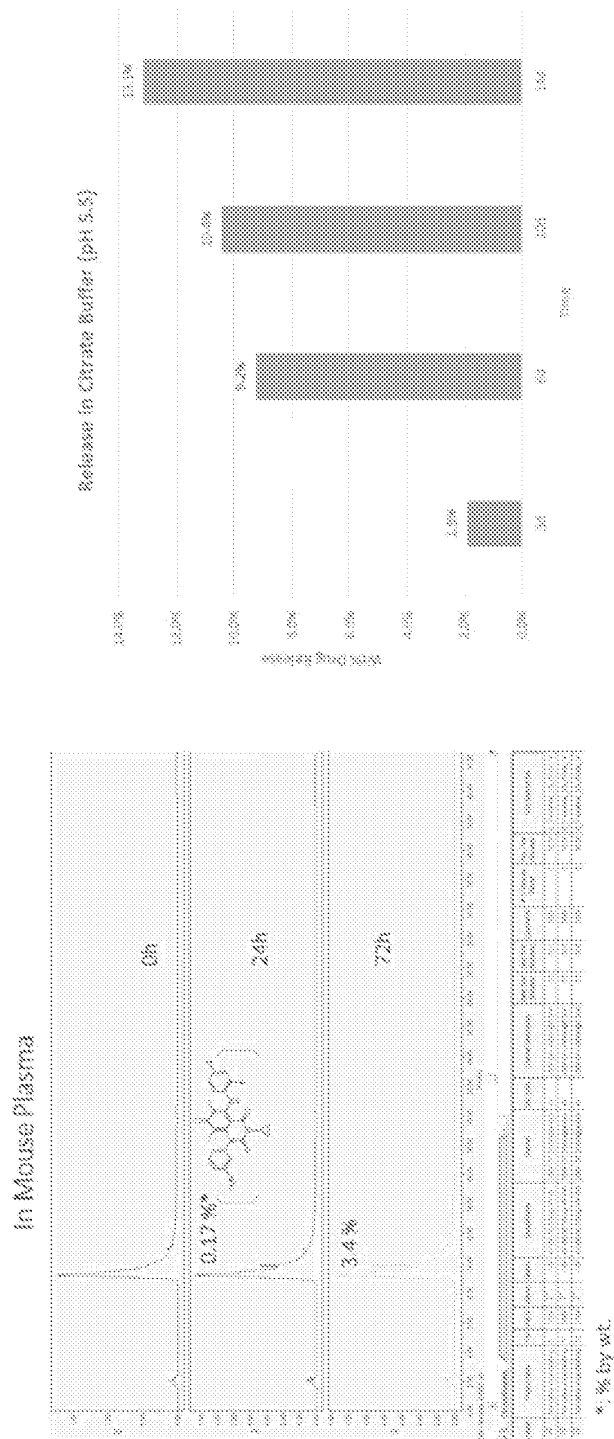


FIG. 57H

D4-Trametinib-disulfide analogue 1 D4-5119

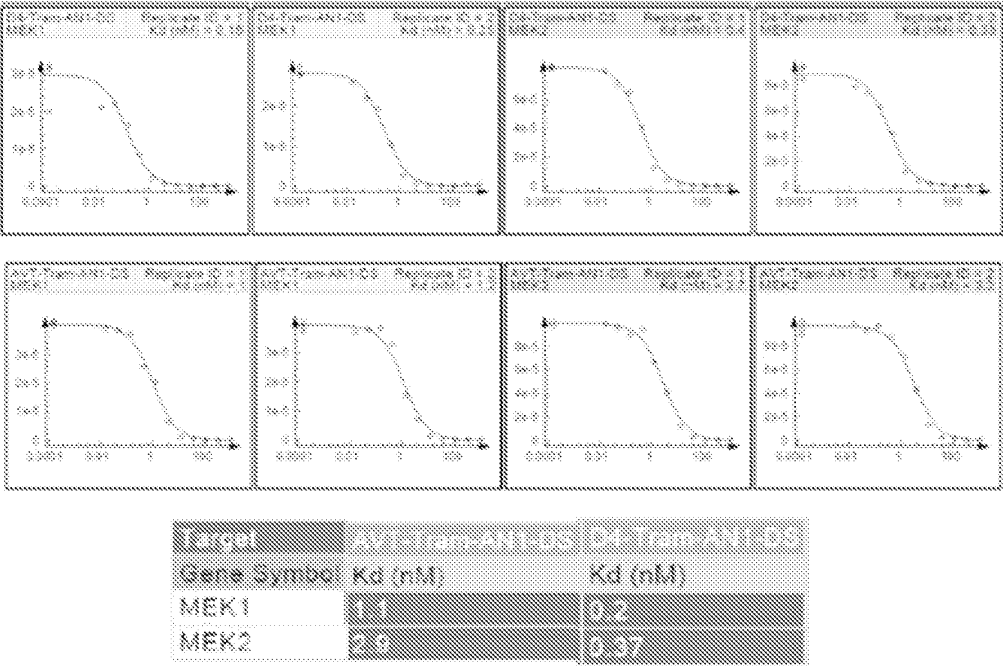
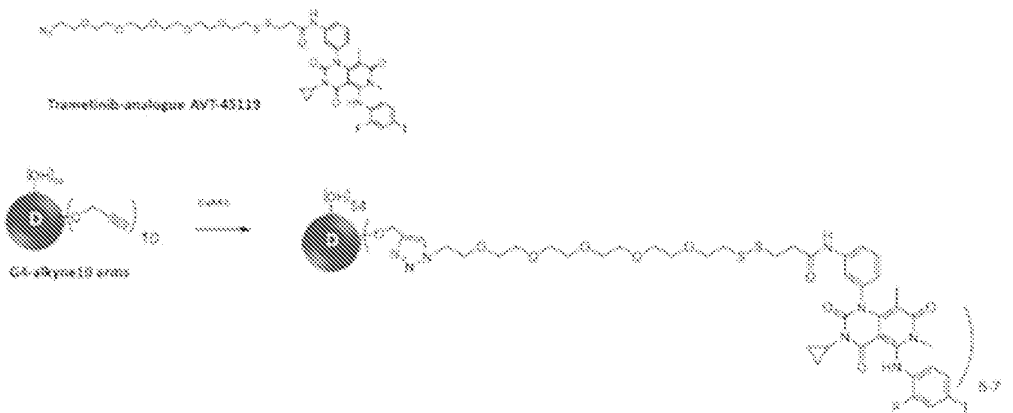
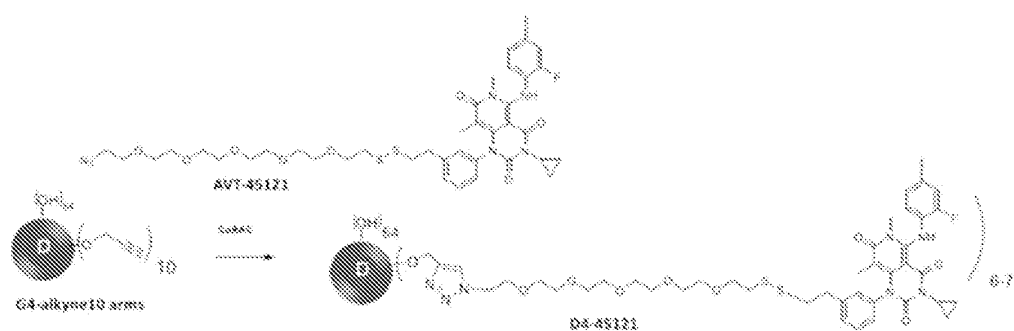


FIG. 57I

D4-Tremetinib-disulfide synthesis (D4-5121) for NF1

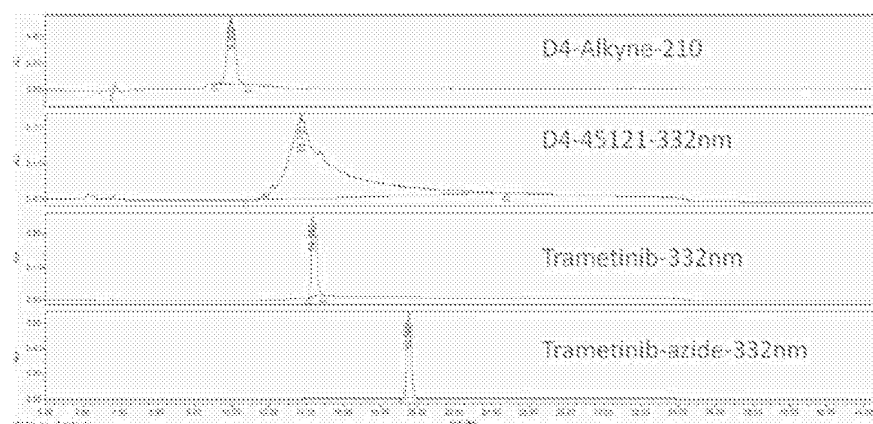


There are 6 molecules attached with the dendrimer and the loading is 17.7%.

Target	D4-45121
Gene Symbol	Kd (nM)
MEK1	0.72
MEK2	1.5

FIG. 57J

HPLC comparison of D4-5121



The purity of the final conjugate is >98%

¹H NMR comparison of D4-5121

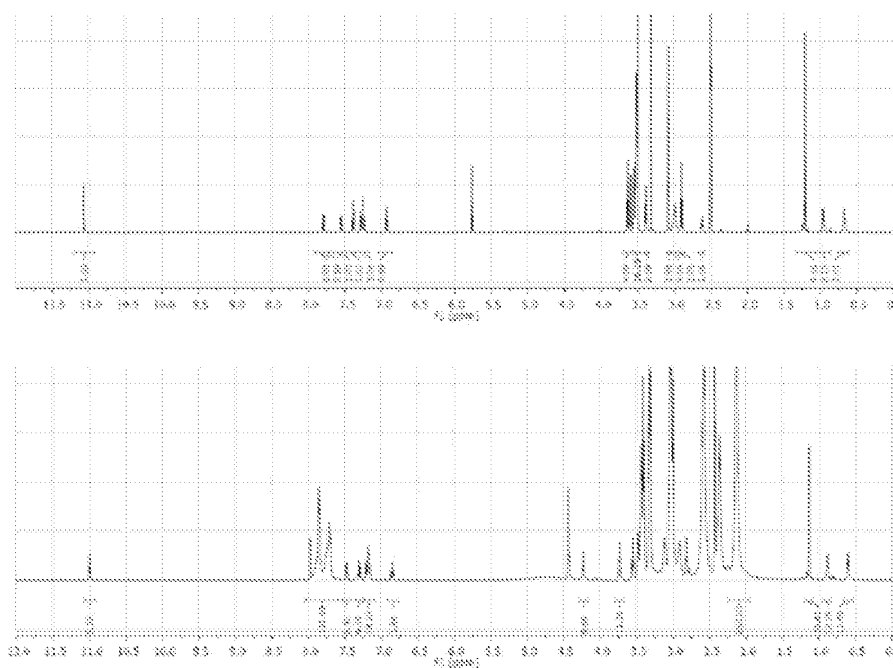


FIG. 57K

Plasma Stability of D4-5121 in MP, RP and HP

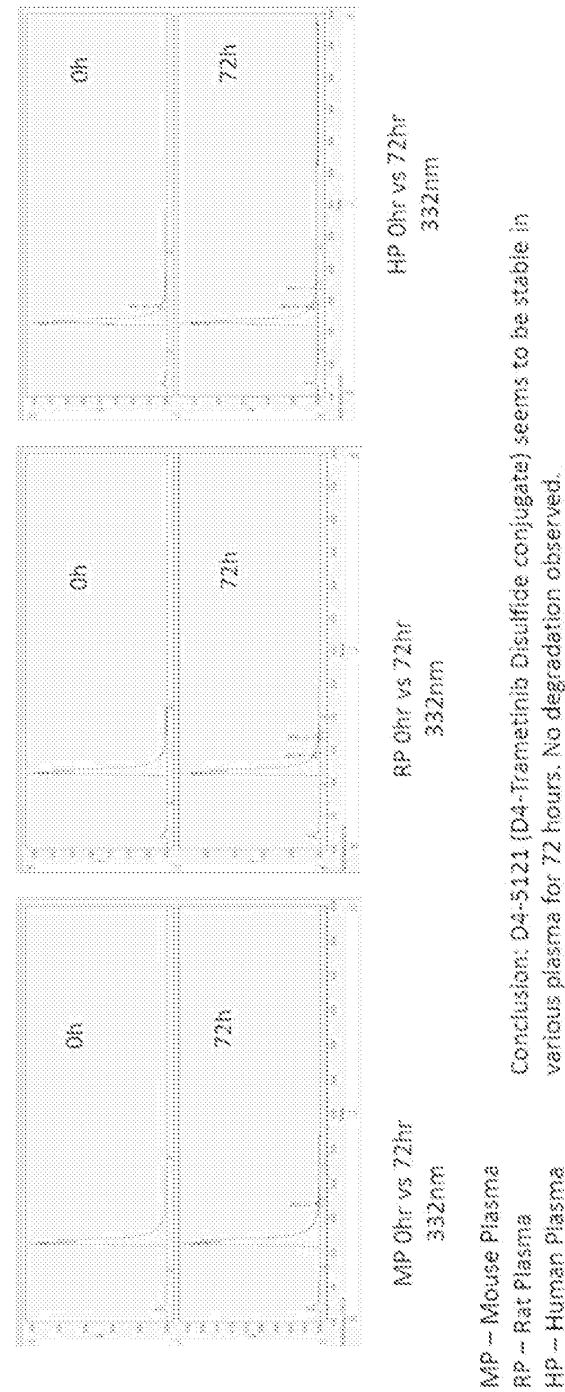
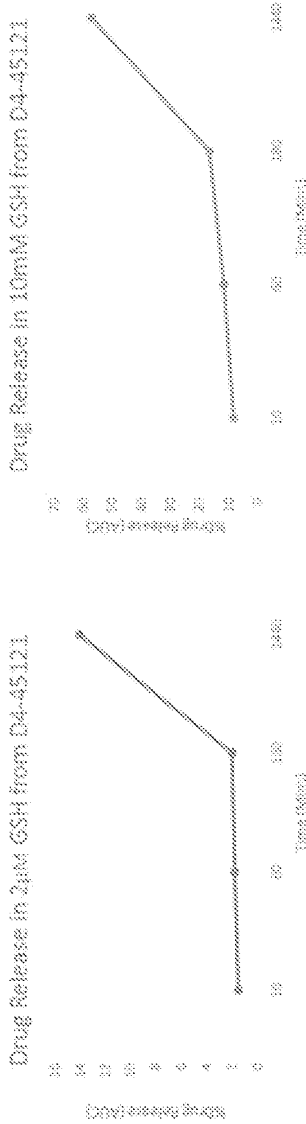


FIG. 57L

Study of D4-5121 in extracellular and intracellular Glutathione conc.



As expected D4-45121 (D4-Trametinib Disulfide conjugate) when incubated with glutathione 2µM (extracellular) and 10mM (intracellular glutathione conc.) was released due to disulfide bond cleavage.

FIG. 57M

D4-Tremetinib-ester synthesis (D4-5124) for NF1

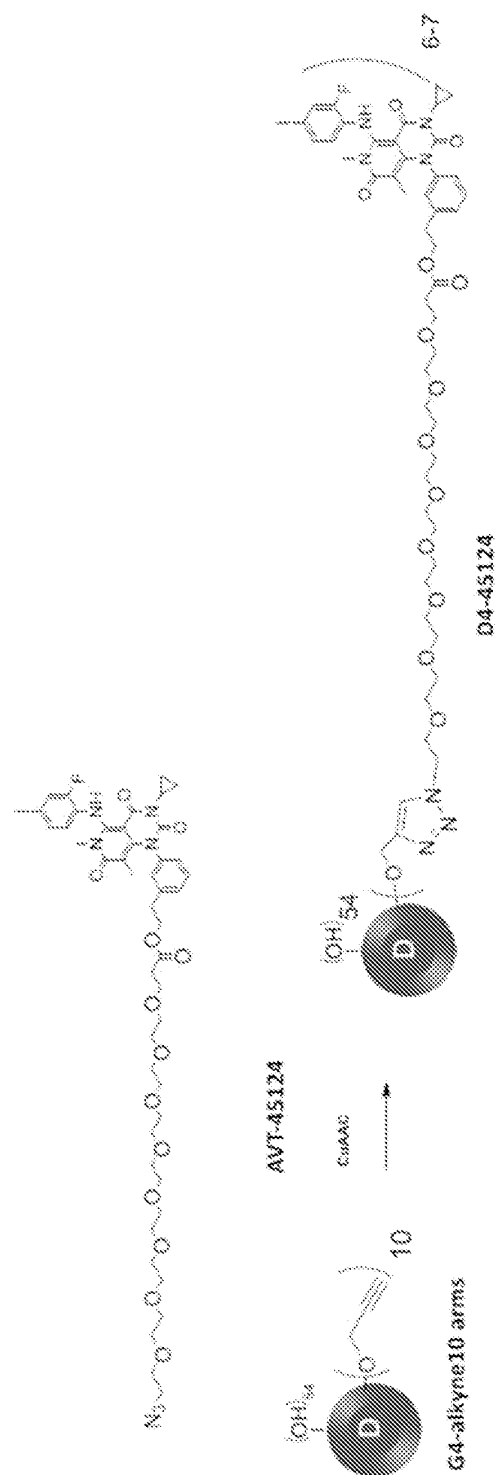


FIG. 57N

HPLC Comparison of D4-5124 and its intermediates

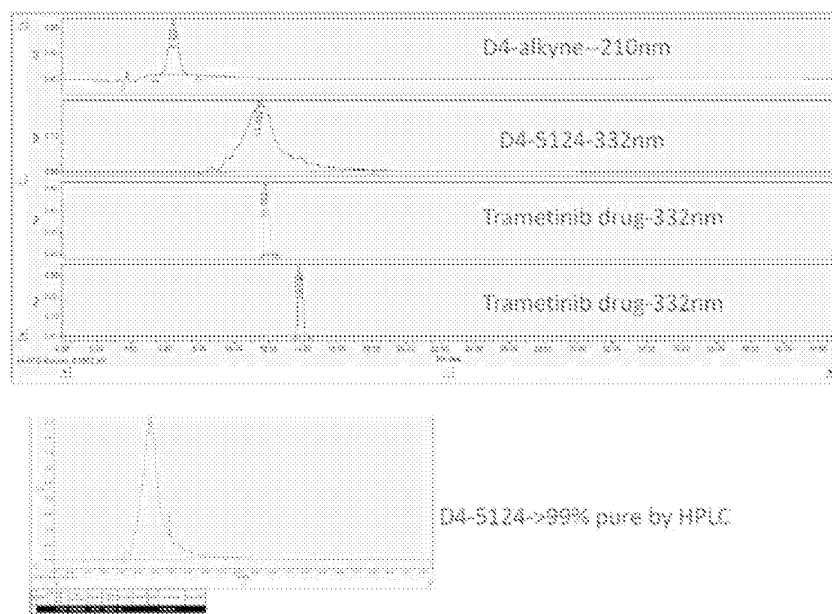
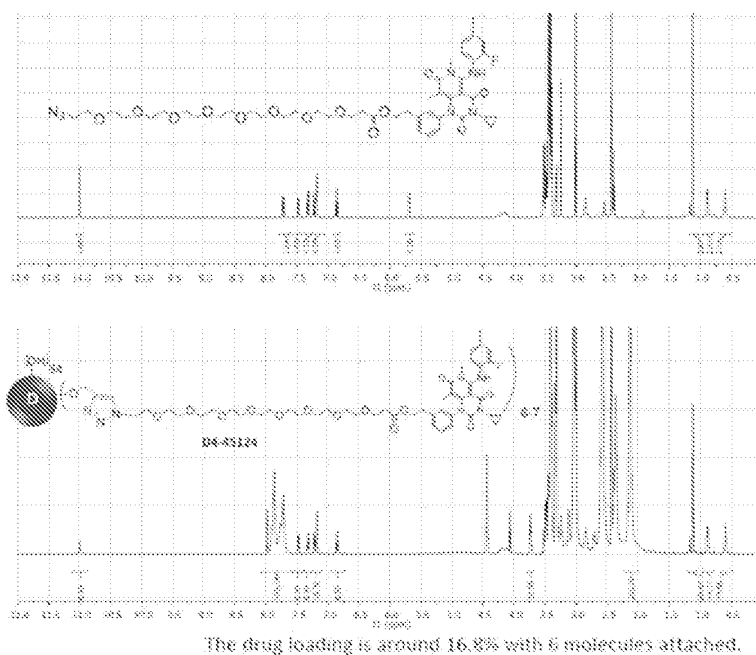
¹H comparison of D4-5124 and its intermediates

FIG. 57O

Plasma and citrate buffer release of D4-5124

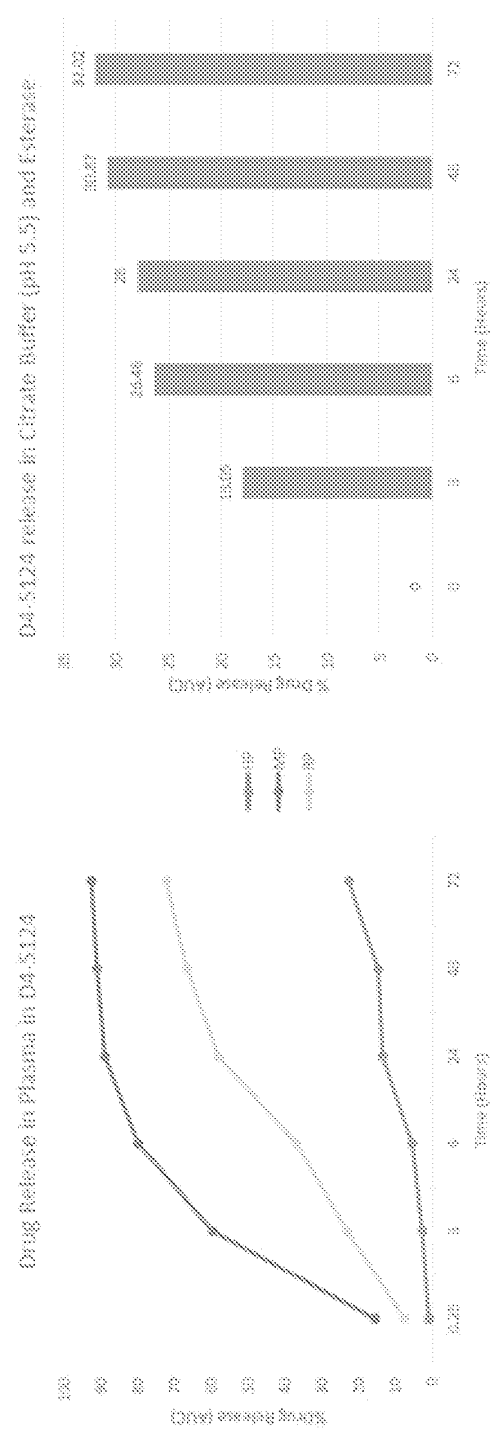


FIG. 57P

D4-Cobimetinib Synthesis (D-5123) for NF1

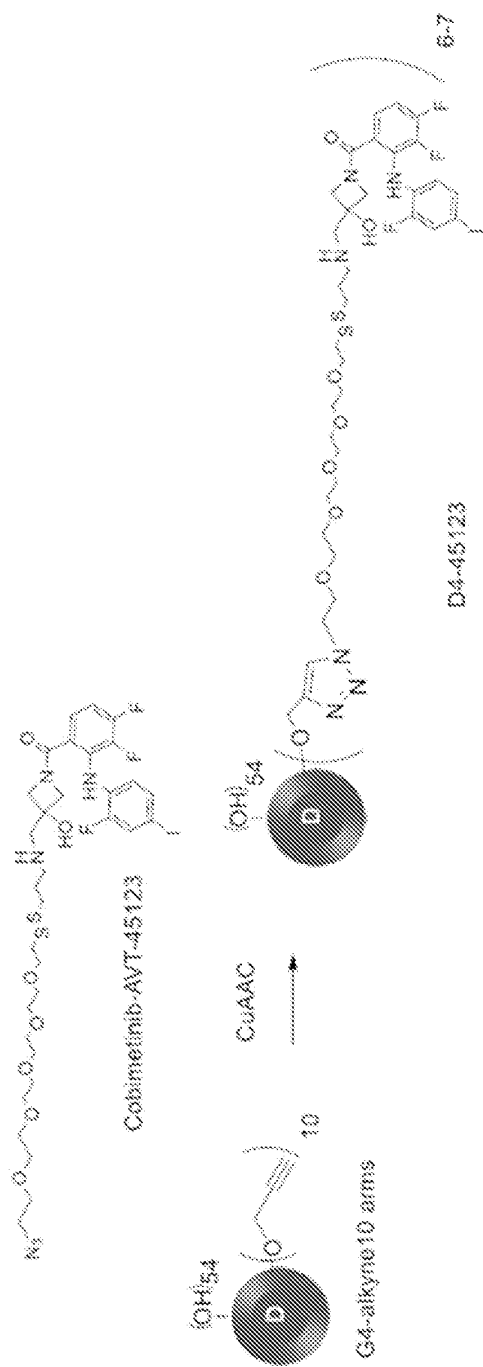
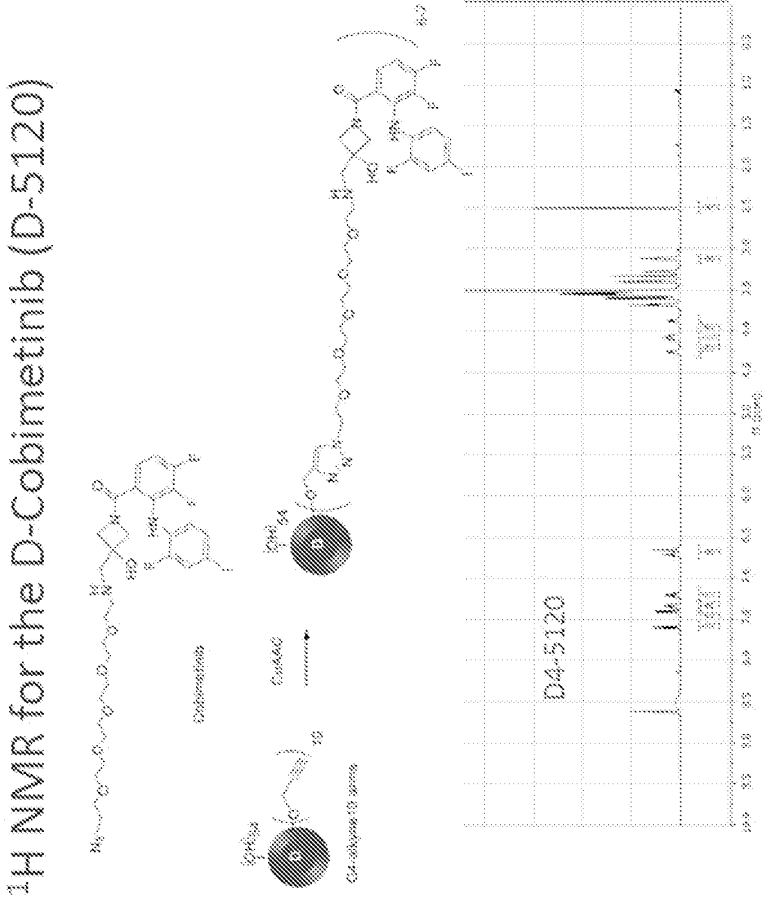


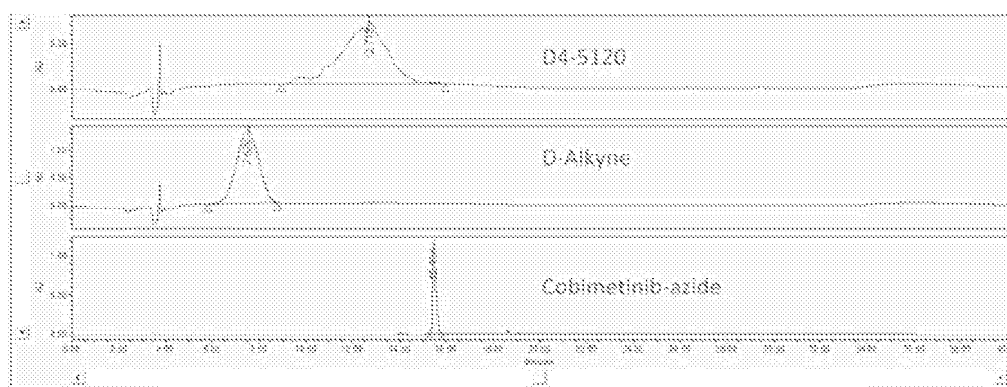
FIG. 57Q



Target	D4-5120
Gene Symbol	Kd (nM)
MEK1	25
MEK2	300

FIG. 57R

HPLC comparison of the D4-5120



D4-5120 is >99% pure by HPLC.

FIG. 57S

D4-Cobimetinib Release in Plasma (D4-5120) for NF1

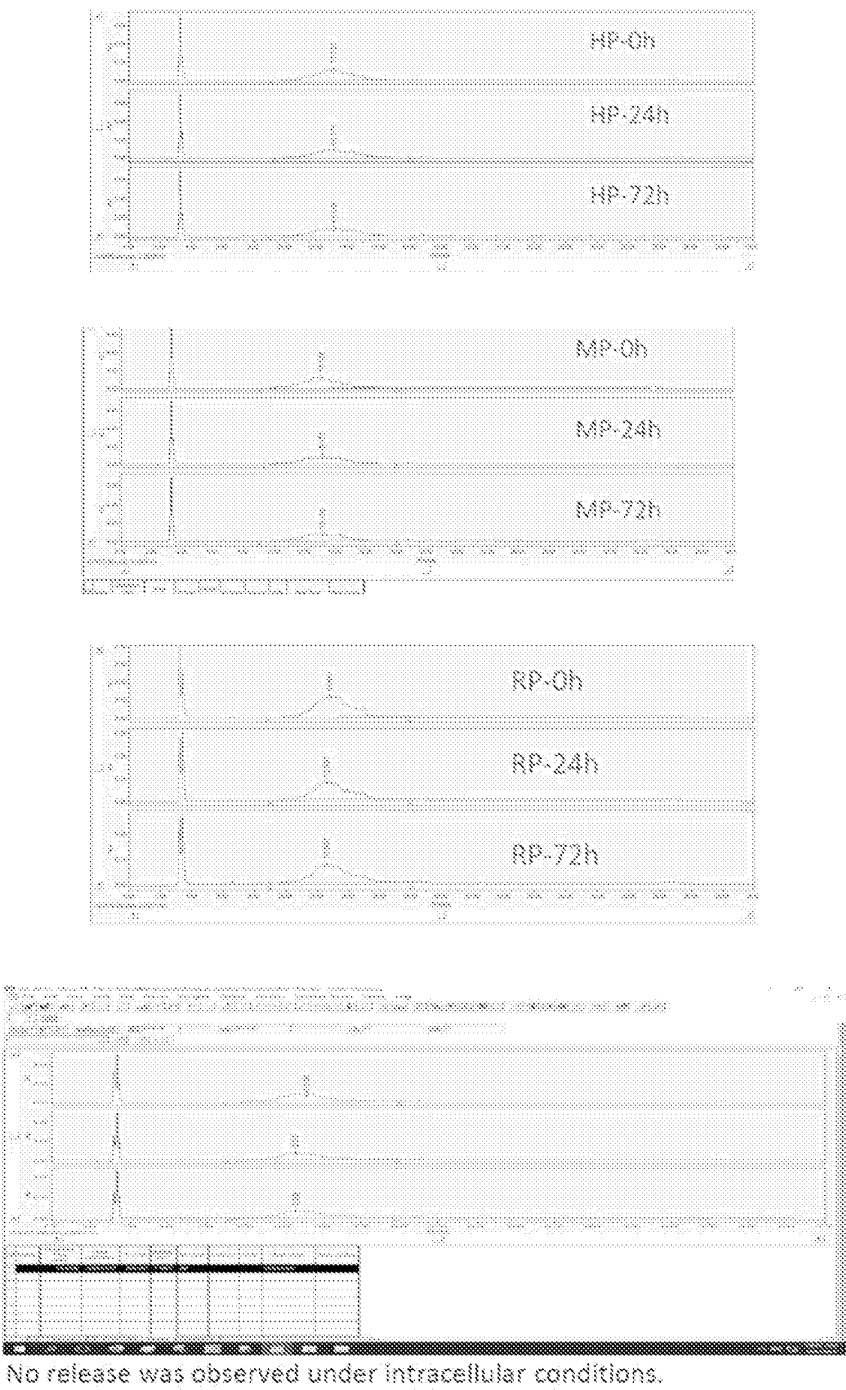


FIG. 57T

Synthesis of D4-5113 (Dasatinib-Thiolated) CSF1R inhibitor

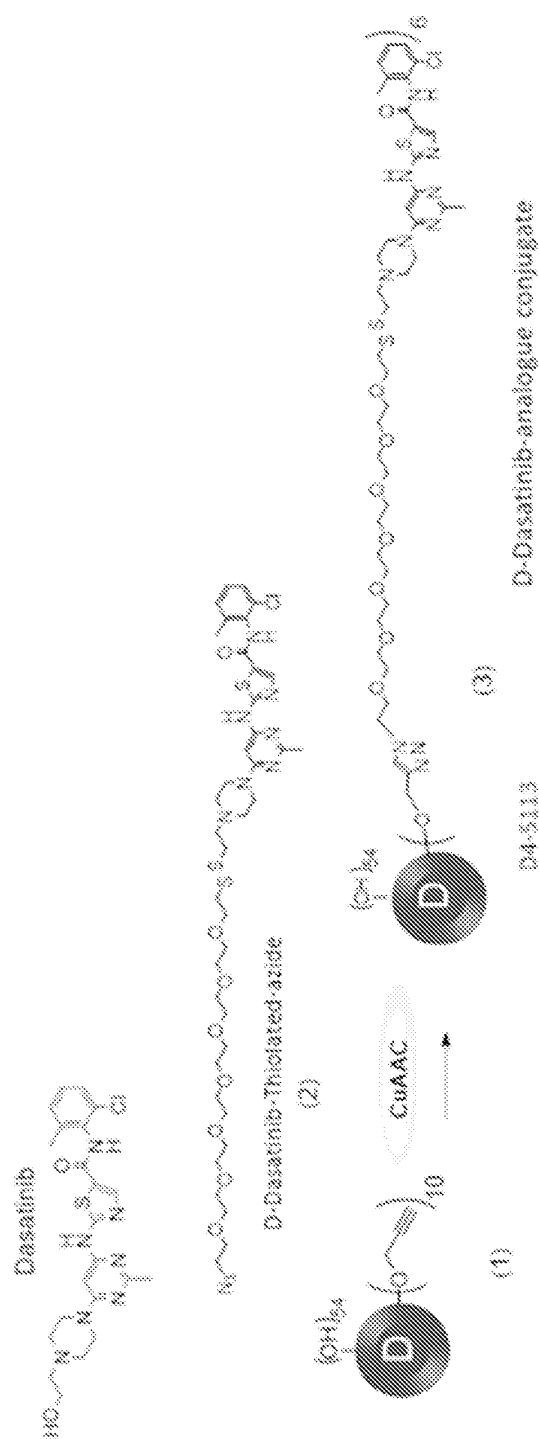
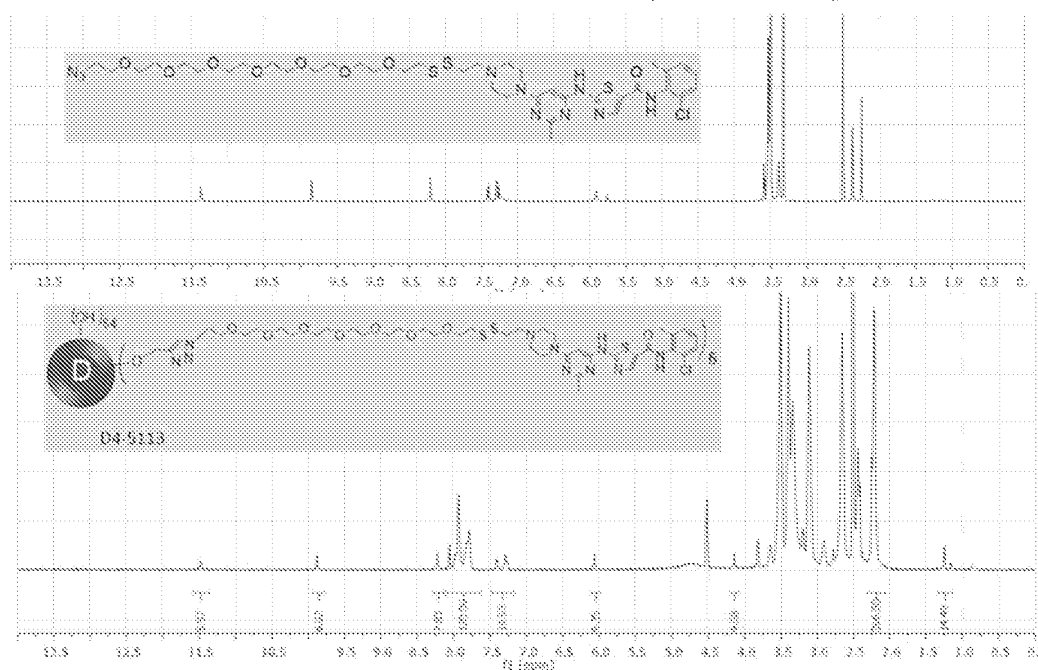


FIG. 58A

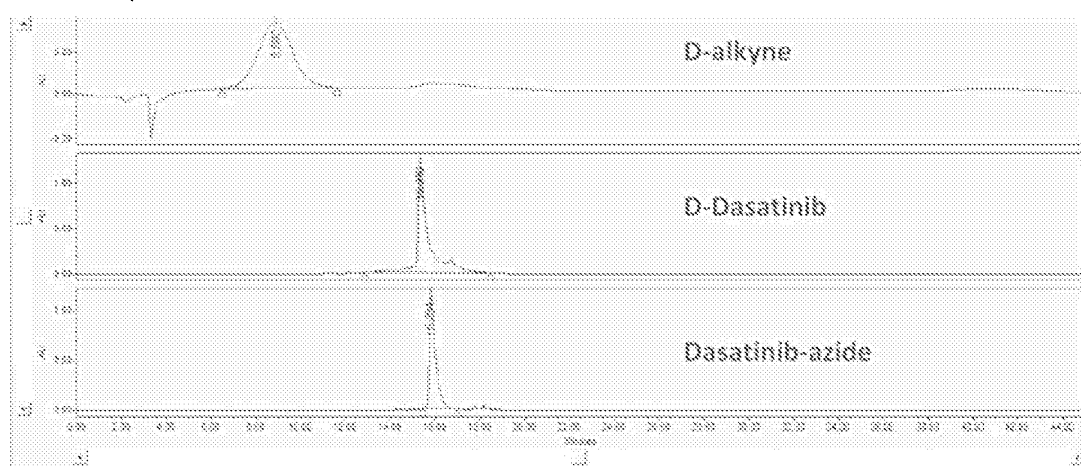
¹H-NMR for D4-disulfide-Dasatinib (AVT-5113)



6 molecules of Dasatinib attached with the dendrimer.

Drug loading: ~14%.

HPLC profile for D4-Dasatinib



D4-Dasatinib is >99% pure by HPLC.

FIG. 58B

D4-5113 Glutathione sensitive release

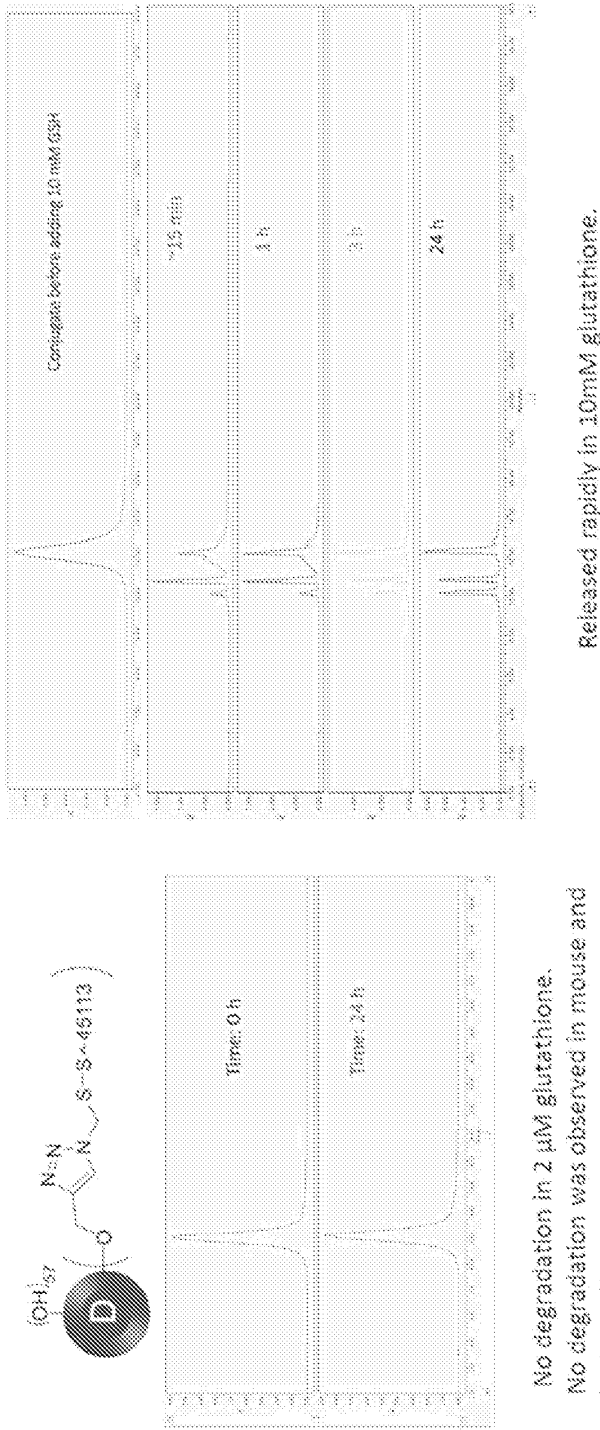
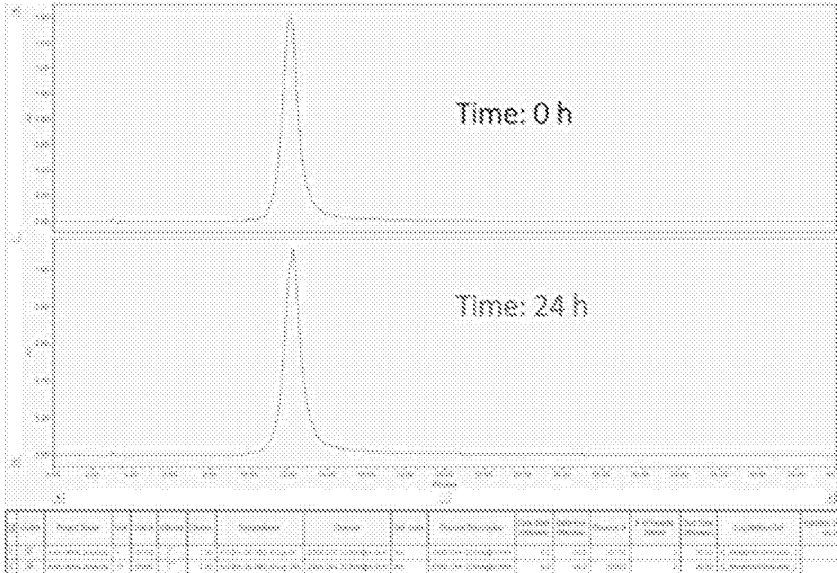


FIG. 58C

D4-5113 stability in PBS

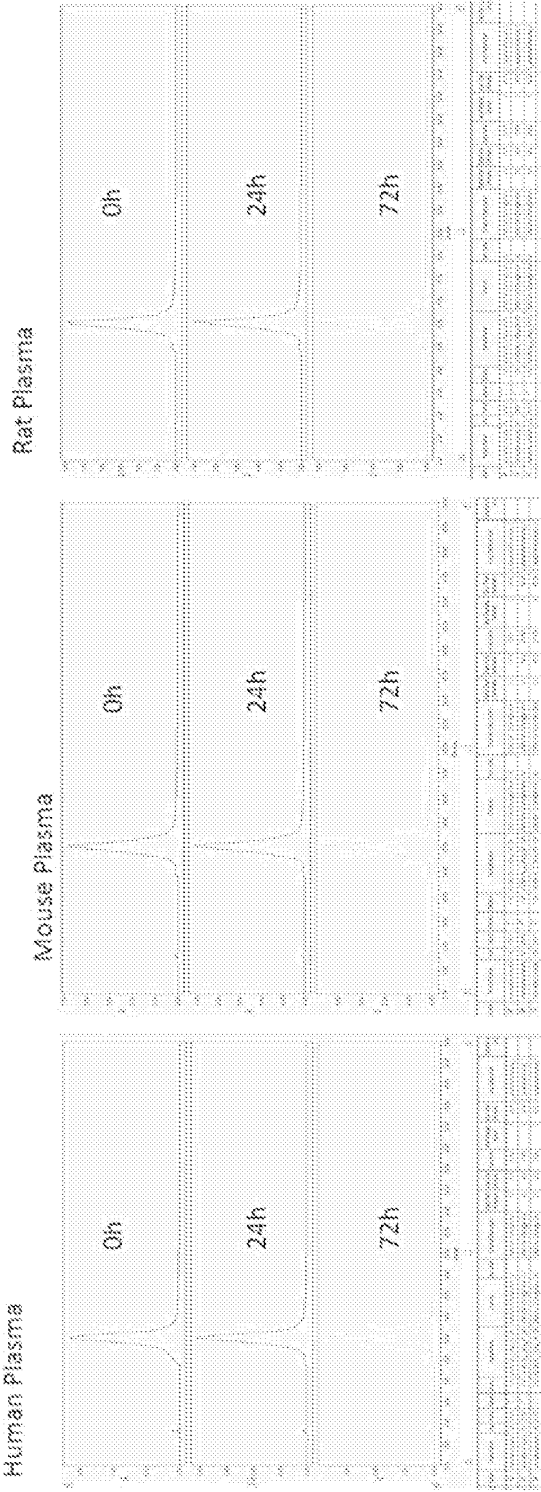
24h stability in PBS @ 37°C



No degradation was observed.

FIG. 58D

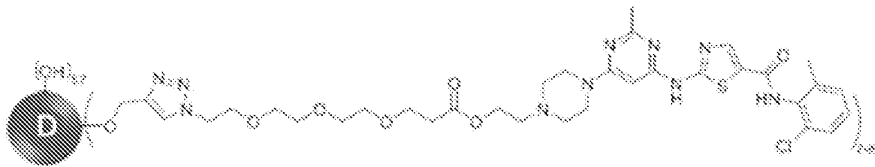
D4-5113 stability in human, mouse and rat plasma



No degradation is observed in human, mouse, rat plasma.

FIG. 58E

D4-4531 Dasatinib ester analogue- C5F1R inhibitor



D4-4531

D4-4531
Kd (nM)
0.25

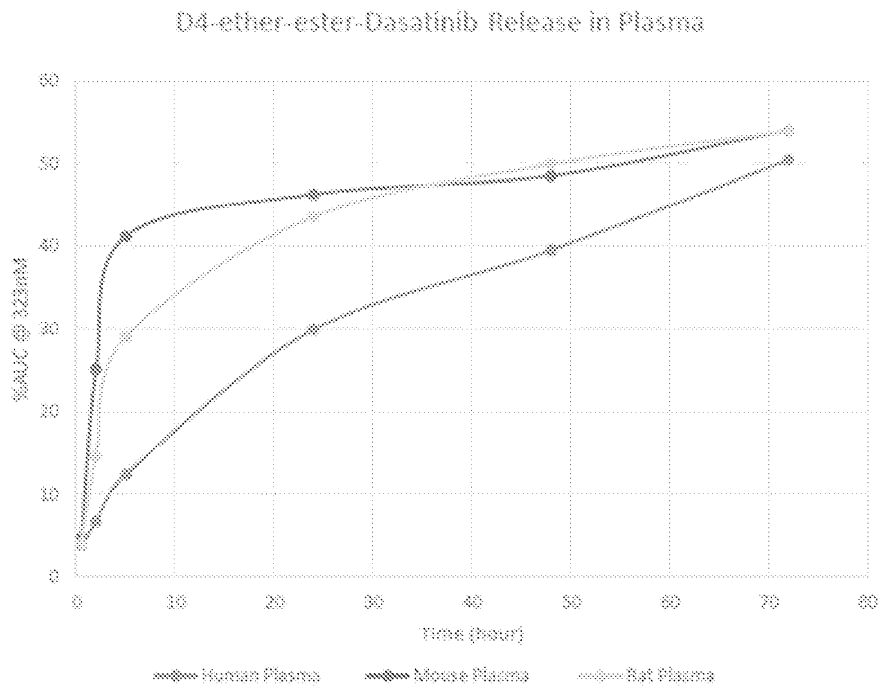
D4-4531 stability in mouse, rat and human plasma

- Neurology
 - D4-ether-ester-Dasatinib release study in Plasma.

Time (h)	Human Plasma*	Mouse Plasma*	Rat Plasma*
0.5	3.85	4.69	4.02
2	6.65	25.09	14.66
5	12.45	41.15	28.99
24	29.89	46.28	43.56
48	39.54	48.49	49.92
72	50.44	53.98	53.93

*, %AUC of Free Drug (Dasatinib) at 323nM

FIG. 58F



D4-4531 intracellular release

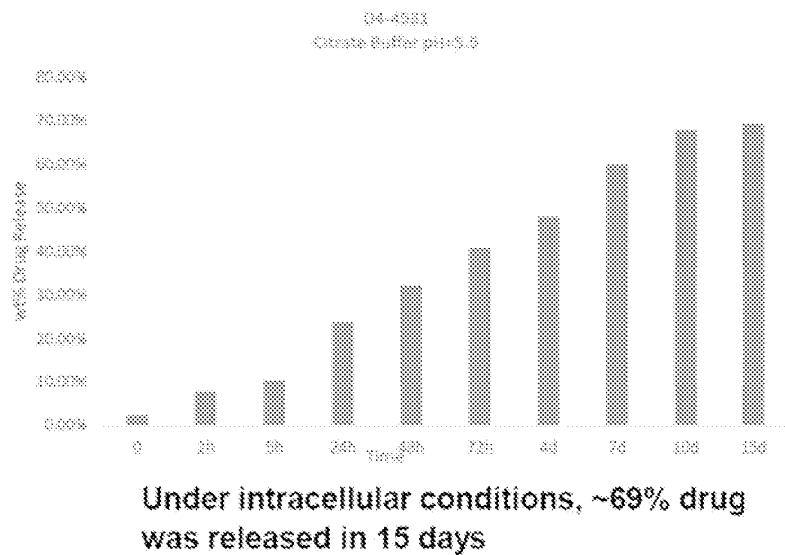
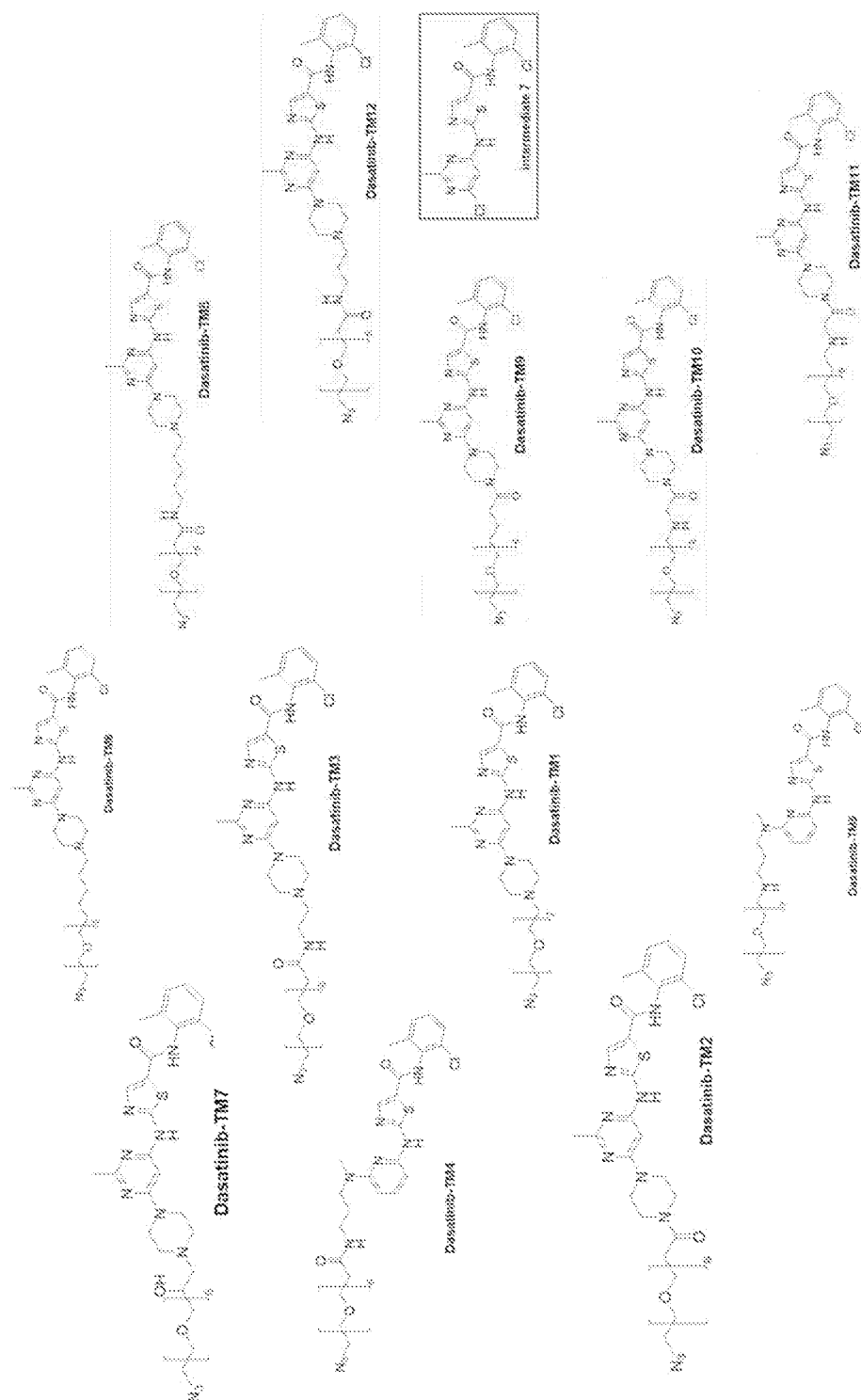
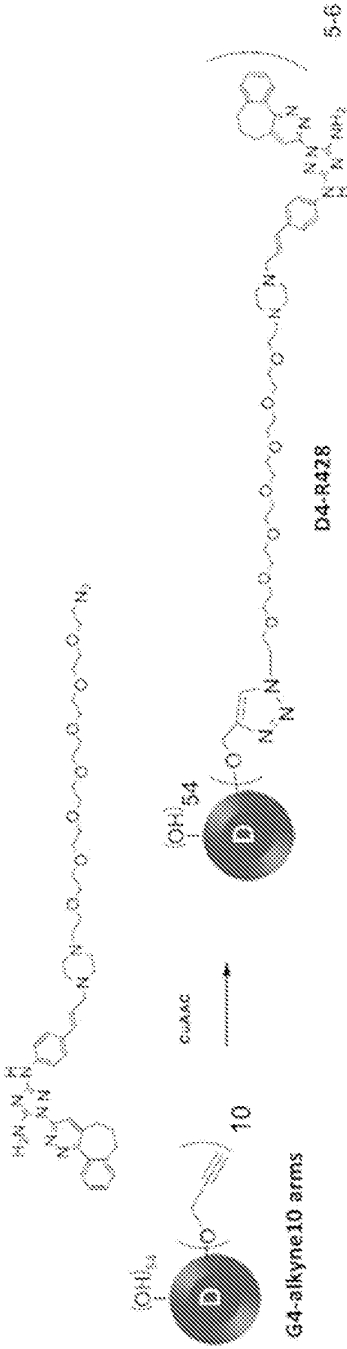


FIG. 58G



FILE 581

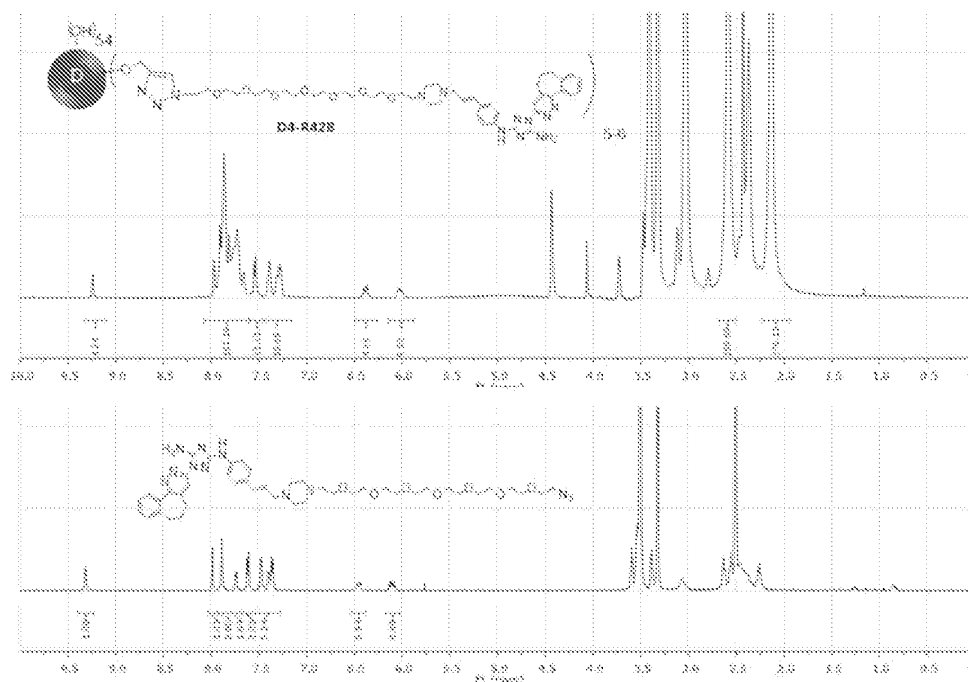
Synthesis of R428 AXL inhibitor



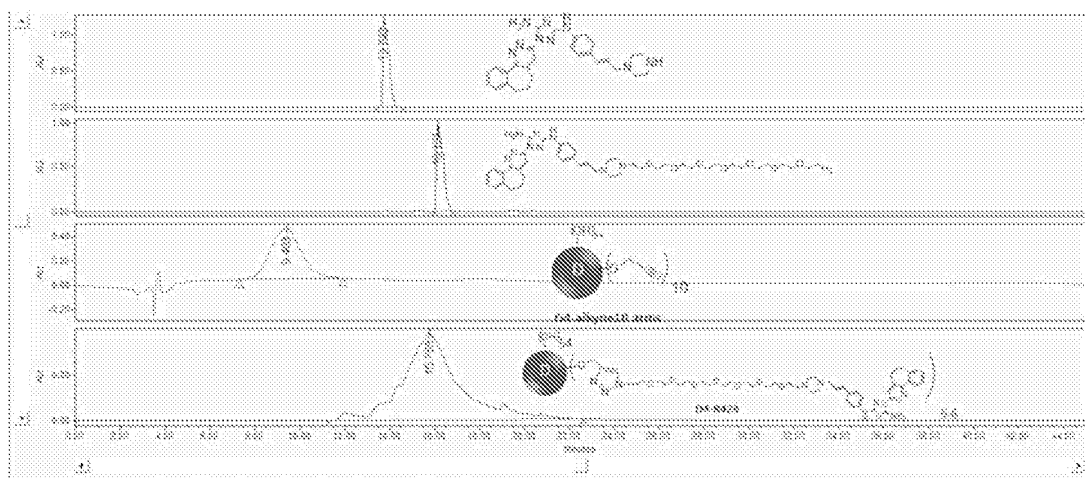
5-6 molecules are attached.
12.6 % loading based on 5 molecules attached.

FIG. 58I

¹H NMR comparison of R428 AXL inhibitor



HPLC comparison of R428 AXL inhibitor



The purity of the final compound is >98.9%.

The drug is visible at 323nm.

FIG. 58J

Plasma Stability of R-428 in MP, RP and HP

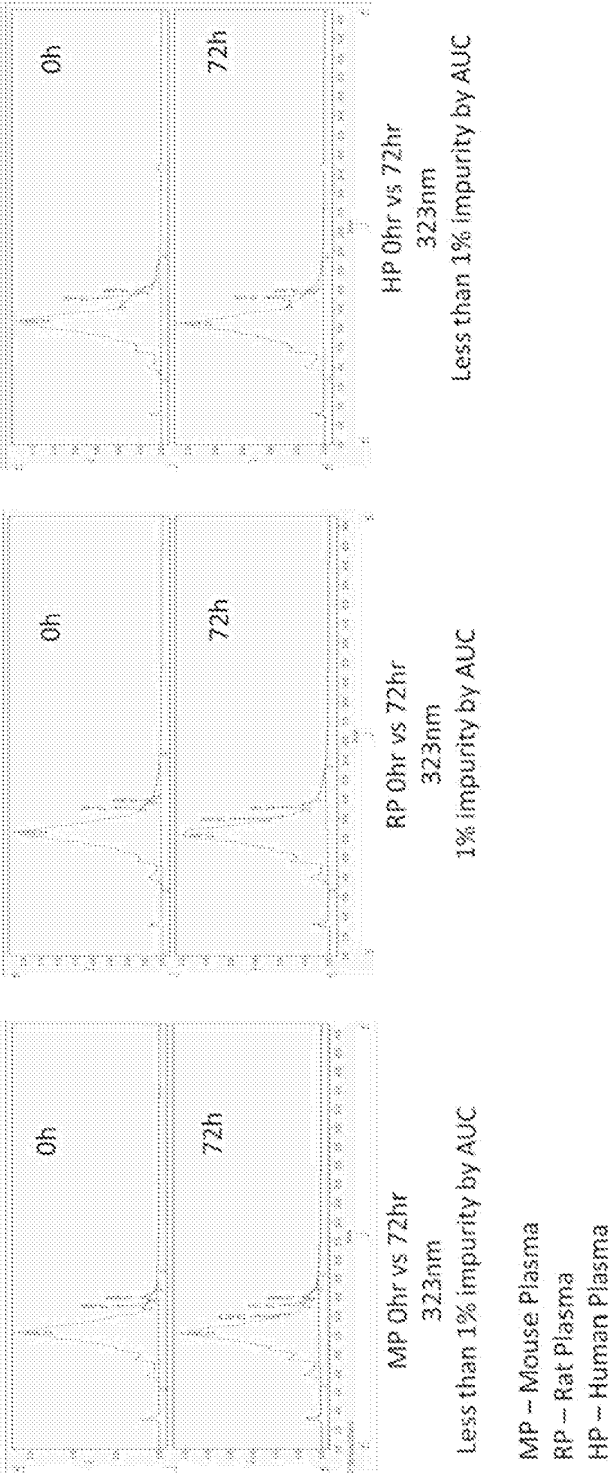


FIG. 58K

Stability evaluation of R-428 in presence of Esterase

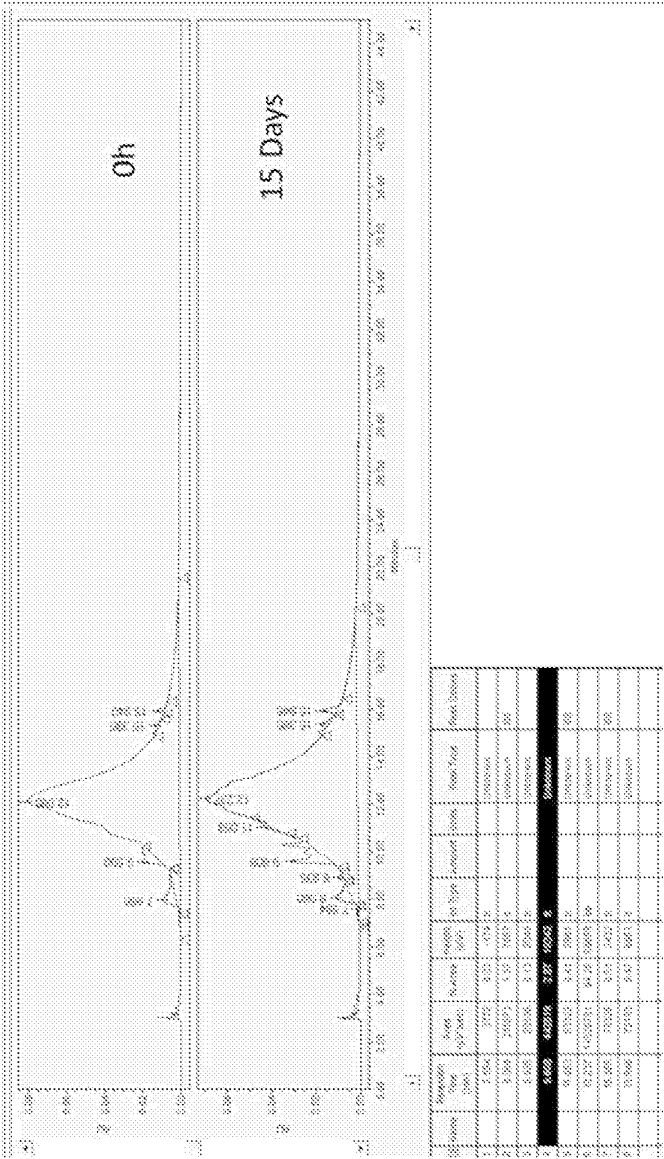


FIG. 58L

Synthesis of R428 thiolated AXL inhibitor

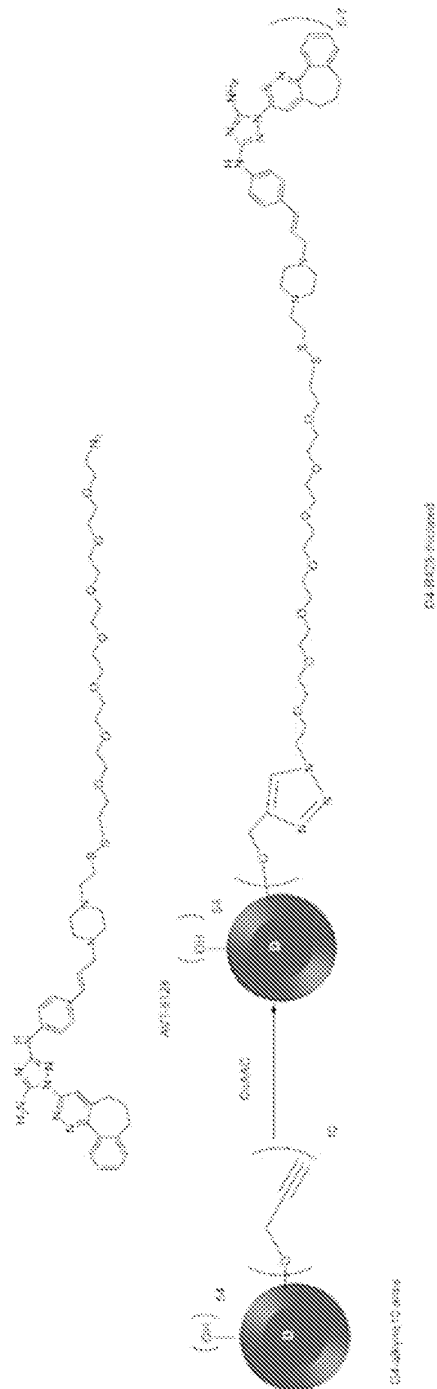
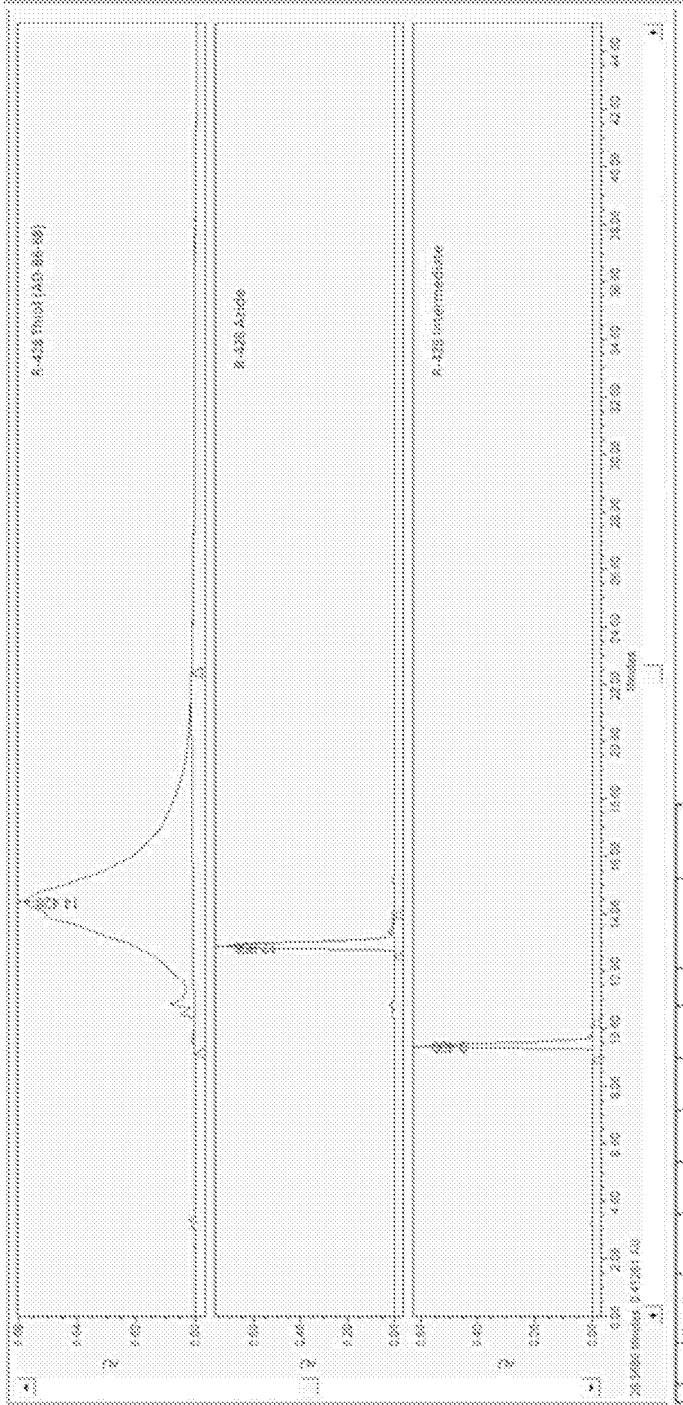


FIG. 58M

HPLC Method development R-428 thiol.



R-428 thiol (AD-B6-68)

FIG. 58N

Synthesis of TP-0903 analogue (AXL inhibitor)

Drug/compound: TP-0903/ Dubermatinib	MOA: AXL Inhibitor
Number of Analogues: 2	Dendrimer generation: 4
Linker: N-alkylated & disulfide	Drug loading: 15% for N-alkylated

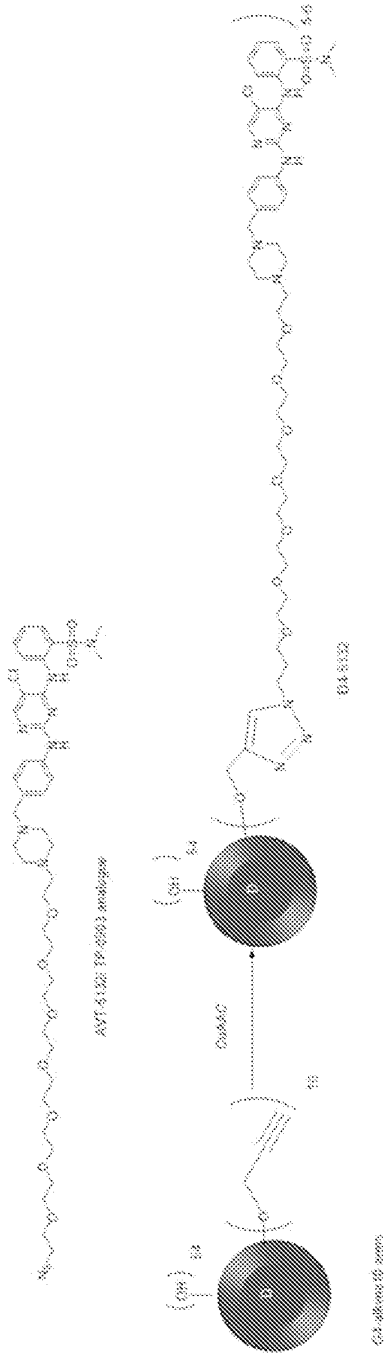
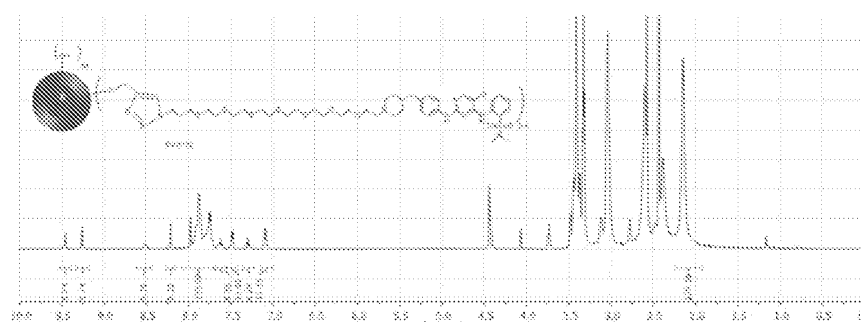
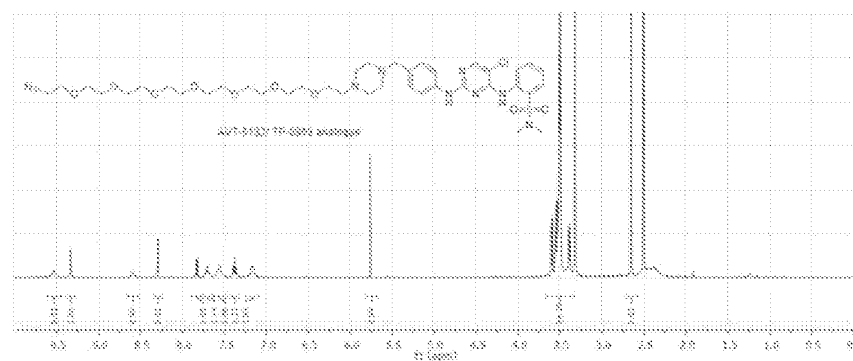


FIG. 580

¹H NMR comparison of D4-5132 (D4-TP-0903 analogue)- AXL Inhibitor

Based on ¹H NMR 5-6 molecules are attached.

HPLC comparison of D4-5132 & intermediates

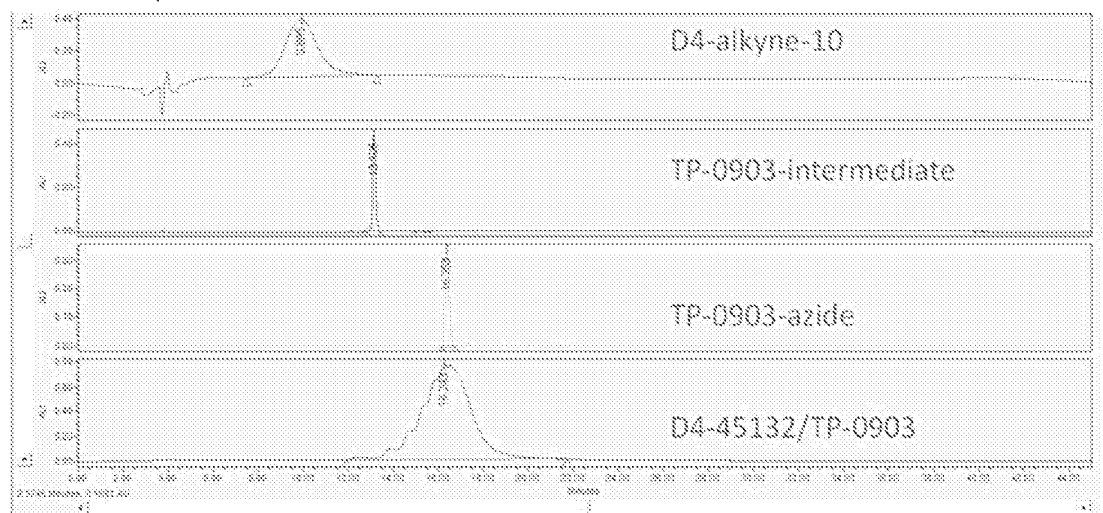


FIG. 58P

Synthesis of c-MET inhibitors- D4-4595 & D4-4598-cMet Inhibitor

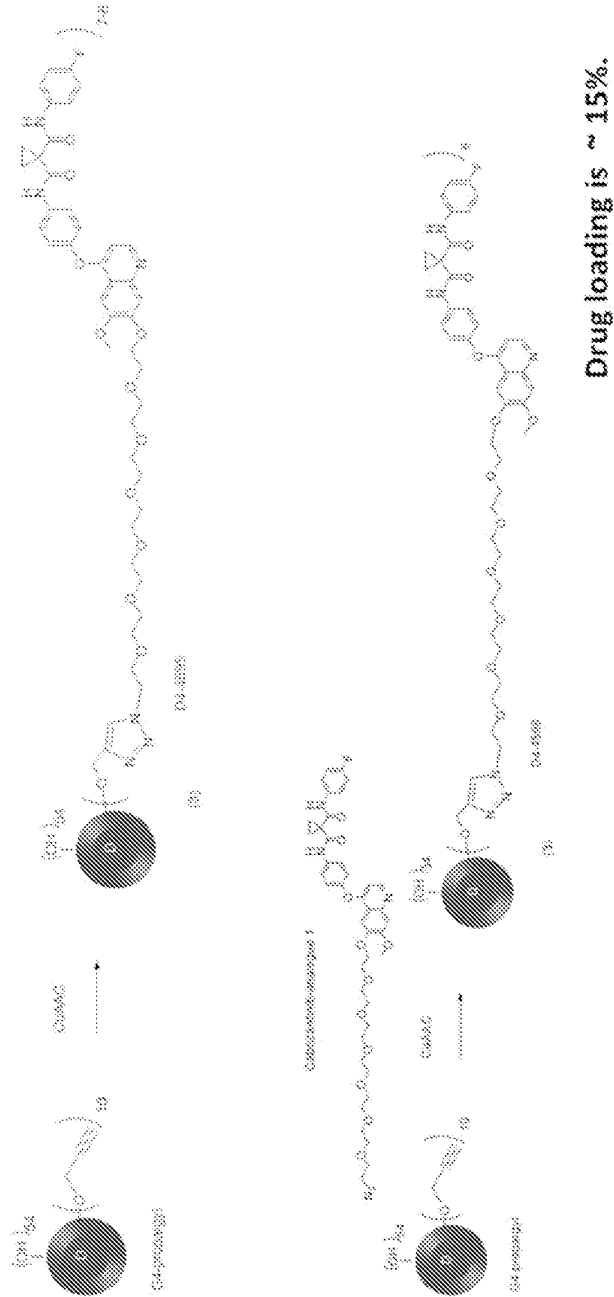
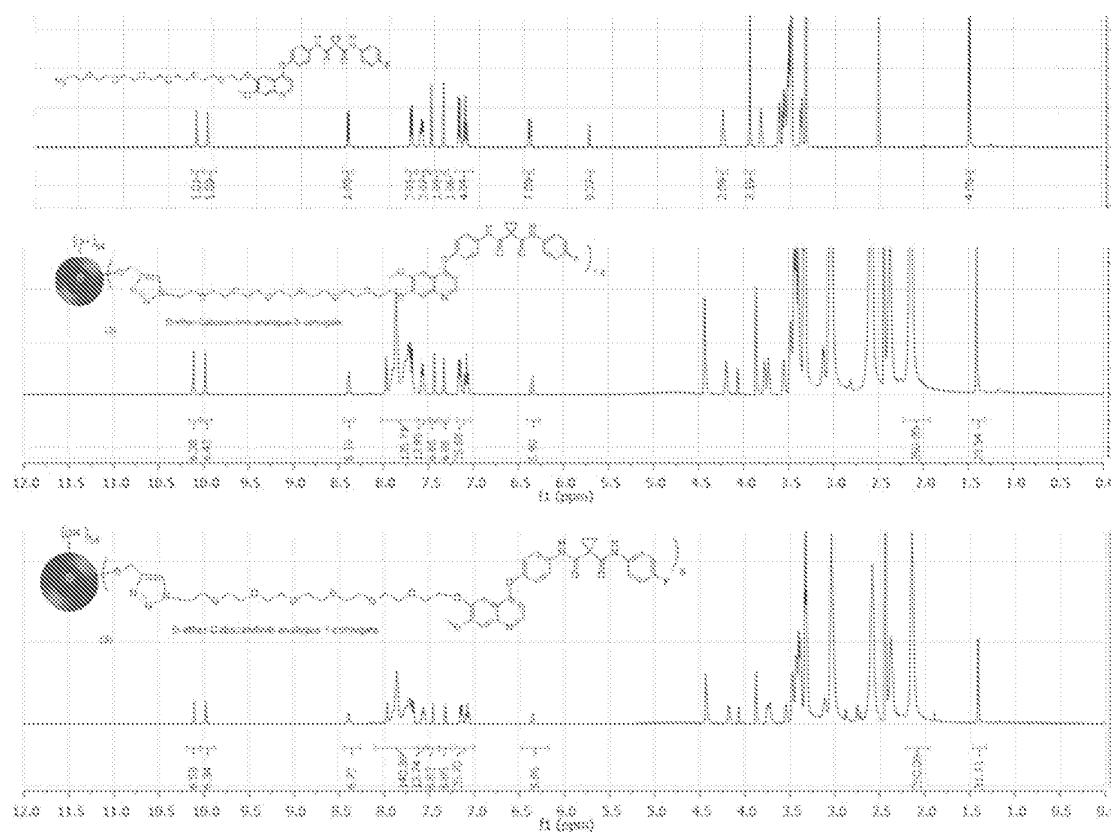


FIG. 58Q

¹H NMR characterization of D4 cabozantinib analogues



From ¹H NMR, attachment of 6-7 molecules is confirmed.

The drug loading based on 6 molecules is ~15% for both the conjugates.

FIG. 58R

HPLC of D4-Cabozantinib analogues

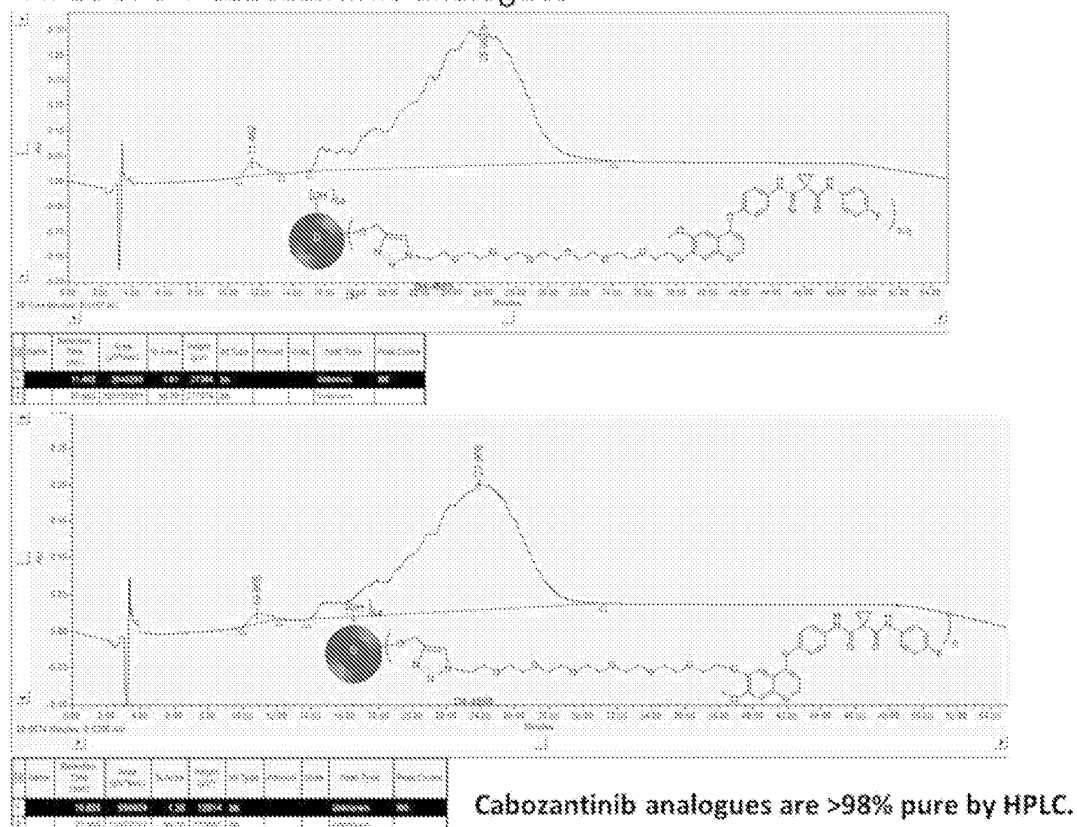
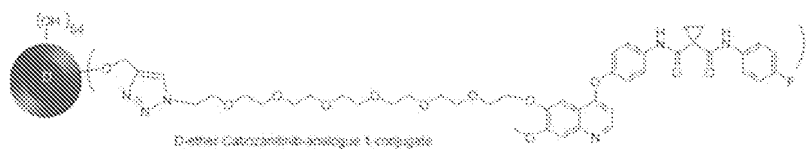
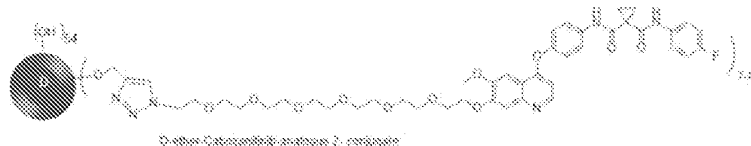


FIG. 58S

D4-Cabozantinib binding affinities for met & VEGFR-2 Kinome assay



D4-4598



D4-4595

Compounds	MET nM	VEGF nM
D4-4598	0.7	27
D4-4595	1.6	14
D6-4598	0.88	30
D6-4595	0.31	10
AVT-4598	0.63	7.9
AVT-4595	0.89	5.8

D4-4595 & D4-4598 are stable in the
Plasma and intracellular conditions

FIG. 58T