Supporting Information

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NF-κB Inhibition Activity of Curcumin-Loaded Sterically Stabilized Micelles and Its Up-Regulator Effect on Enhancement of Cytotoxicity of a New Nano-Pirarubicin Formulation in the Treatment of Breast Cancer

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Table S1: ^{1}H- and ^{13}C-NMR data of Curcumin (400 and 100 MHz, resp., in *d*-DMSO; d in ppm, *J* in Hz)

	δ (H)	δ (C)	COSY	HMBC
H-1 Enol	6.04	103.95	3,3′,4,4′	C-2,3
H-1 β-diketo**	5.95	55.00	3,3′,4,4′	C-10,10′
C-2,2′ Enol**	-	186.31	-	H-3,3′,4,4′
C-2,2′ β-diketo**	-	163.00	-	H-4,4′,9,9′
H-3,3′ Enol**	6.73 (*d, J*= 16)	124.20	1*,4,4′, 6*,6′*	C-1, C-2,2′ ,C-5,5′
H-3,3′ β-diketo**	6.66 (*d, J*= 16)	123.9	10-10′	C-1, C-2,2′,C-4,4′
H-4,4′ Enol**	7.53 (*d, J*= 16)	143.81	1*,3,3′, 6*,6′* ,9*,9′*,10*,10′*	C-2,2′ ,3,3′,5,5′,6,6′,10,10′
H-4,4′ β-diketo**	7.59 (*d, J*= 16)	133.80	3*,3′*	C-6,6′,10,10′
C 5,5′	-	129,46	-	H-3,3′, 4,4′, 6,6′, 9,9′
H-6,6′	7.30 (*d, J*= 2)	114,48	4*,4′*,9*,9′*,10,10′	C-(OCH_3), 4,4′, 5,5′, 7,7′, 8,8′, 9,9′, 10,10′
C-7,7′	-	151.11	-	H-6,6′, 9,9′, 10,10′
OCH_3 7,7′	3.82	58.80	-	H-6,6′, 9,9′, 10,10′
C-8,8′	-	152.47	-	H-6,6′, 9,9′, 10,10′
H-9,9′	6.81(*d, J*= 9)	118.83	4*,4′*,6*,6′*,10,10′	C-2,2′ β-diketo** C-(OCH_3), 5,5′, 6,6′, 7,7′, 8,8′
H-10,10′	7,13(*dd,J*= 2,9)	126.21	4*,4′*,6,6′,9,9′,	C-(OCH_3), 4,4′,6,6′, 7,7′, 8,8′, 9,9′
OH 2,2′	9.642 (*s*)	-	-	-

***:** Very weak interaction

****:** Enol and keto expresses the tautomeric form of the carbons 2 and 2′

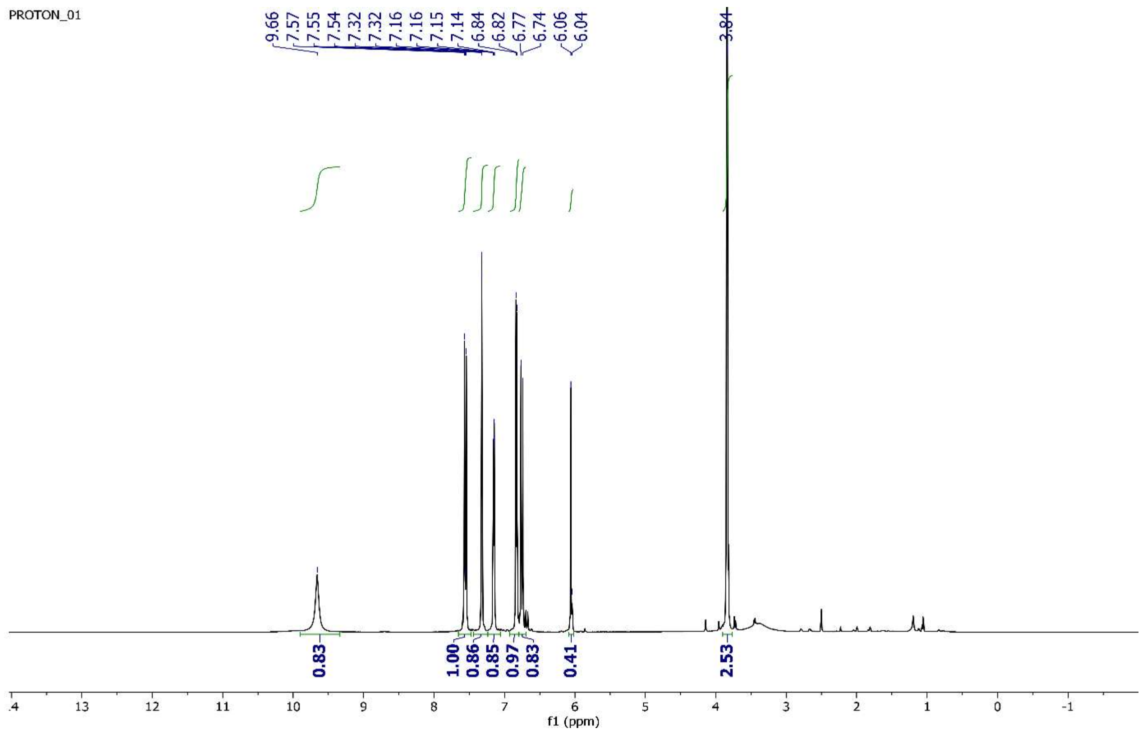

Figure S1: ^{1}H-NMR Spectrum of Curcumin (400 MHz, *d*-DMSO)

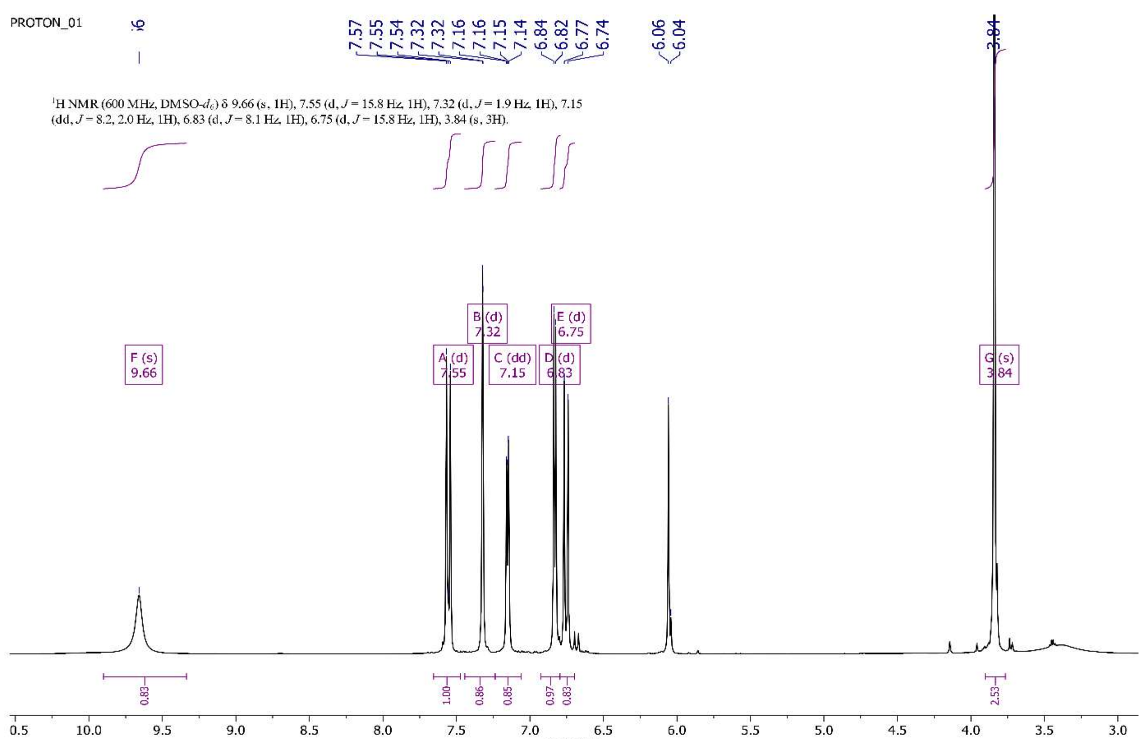

Figure S2: Expanded ^{1}H-NMR Spectrum of Curcumin (From 2.90 to 10.50 ppm)

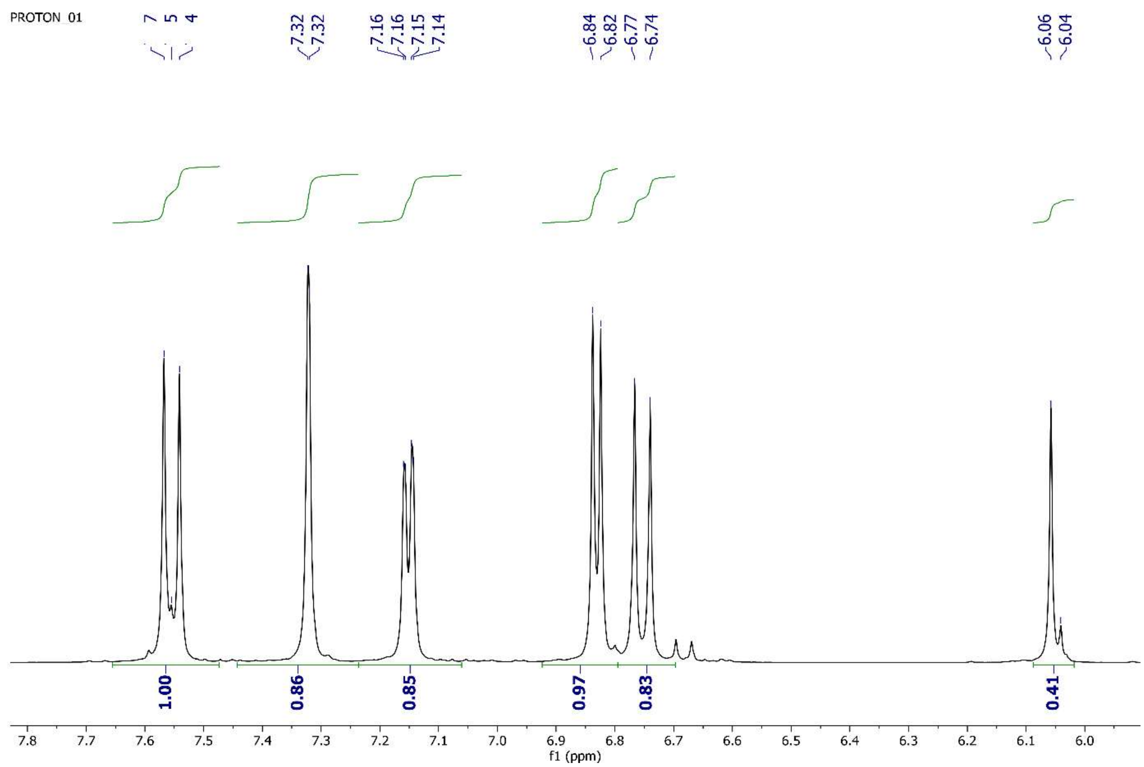

Figure S3: Expanded ^{1}H-NMR Spectrum of Curcumin (From 5.96 to 7.81 ppm)

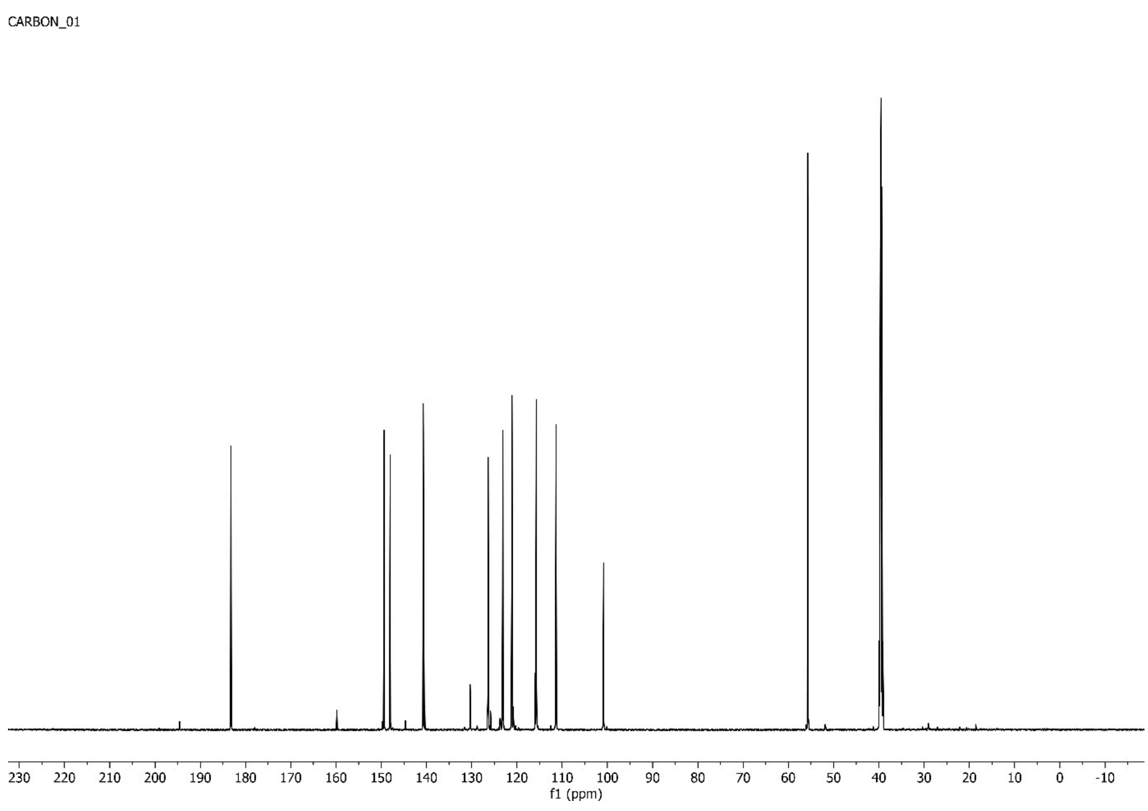

Figure S4: ^{13}C-NMR (100 MHz, $CDCl_3$) Spectrum of Curcumin

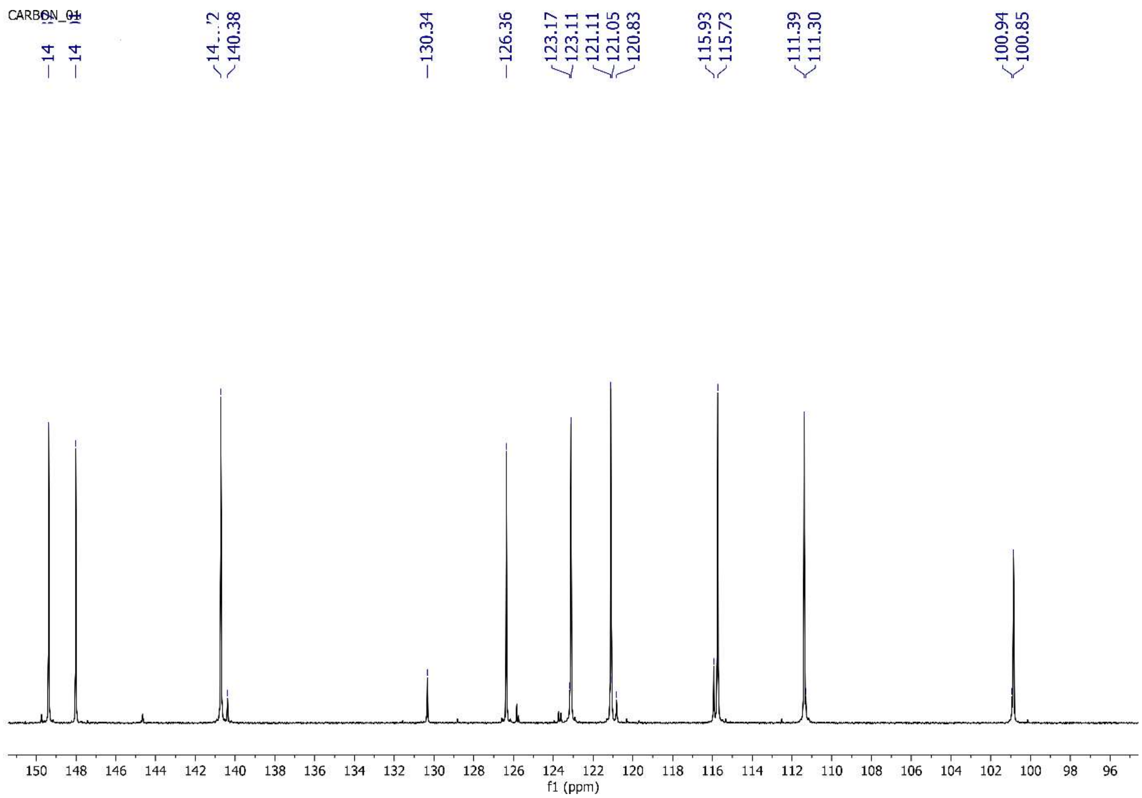

Figure S5: Expanded ^{13}C-NMR Spectrum of Curcumin (From 95 to 151 ppm)

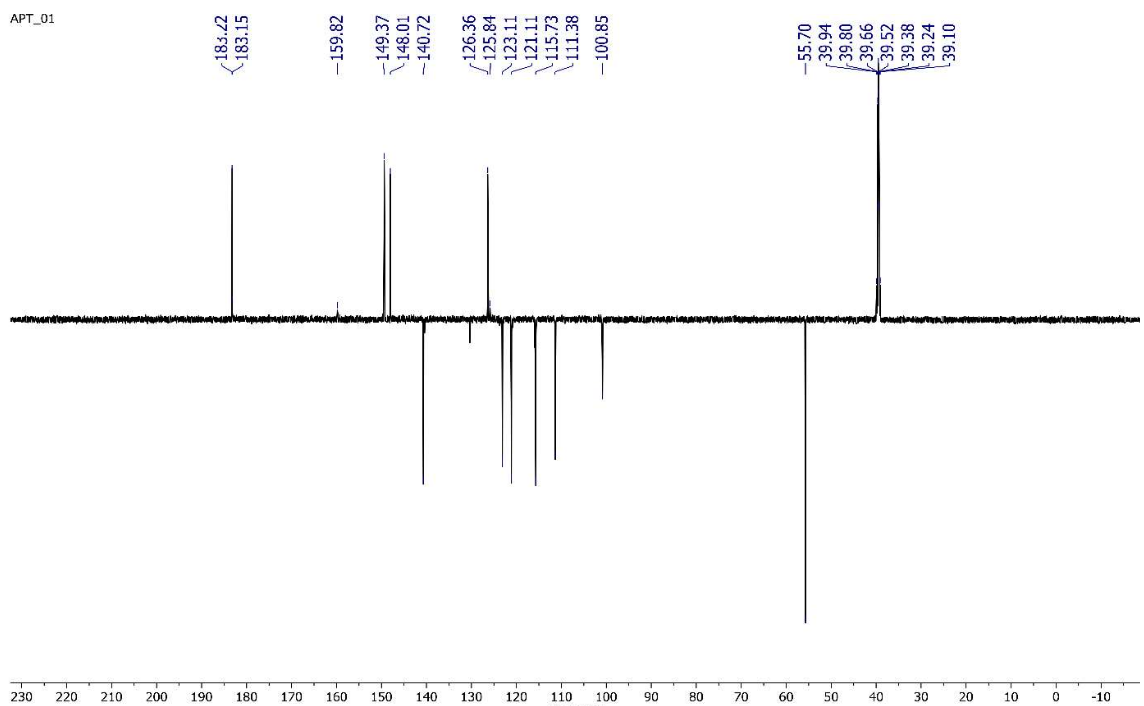

Figure S6: APT Spectrum of Curcumin

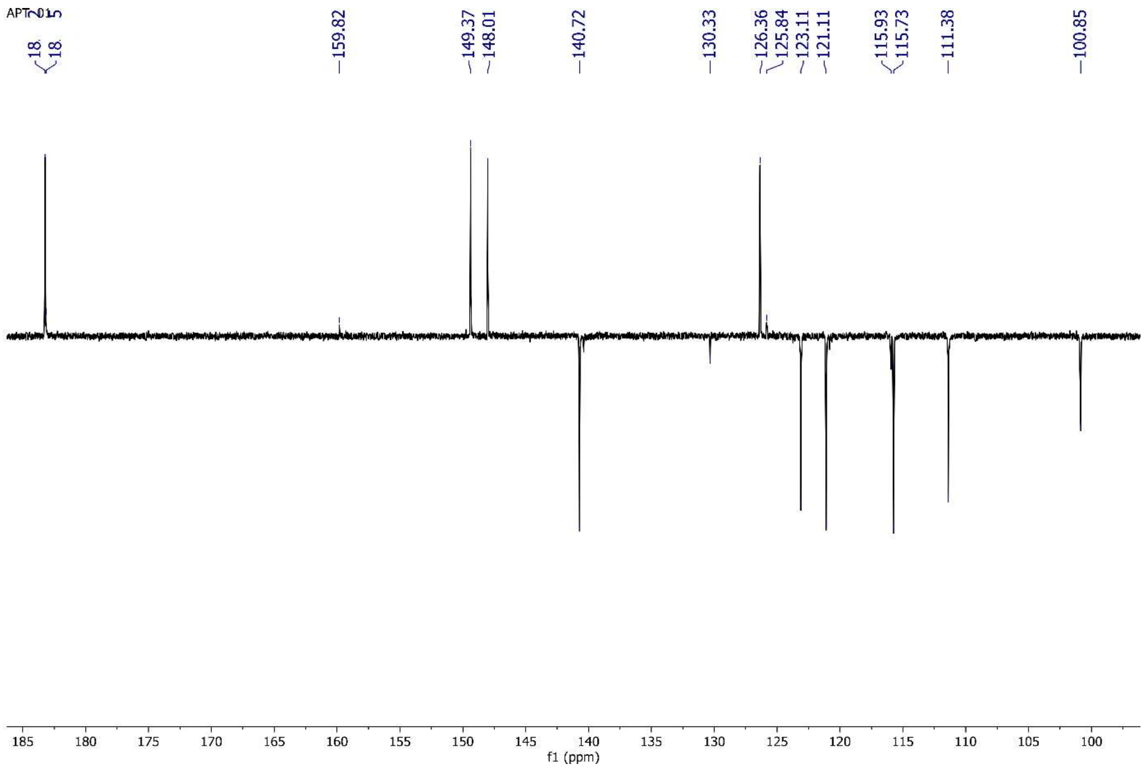

Figure S7: Expanded APT Spectrum of Curcumin (From 95 to 181 ppm)

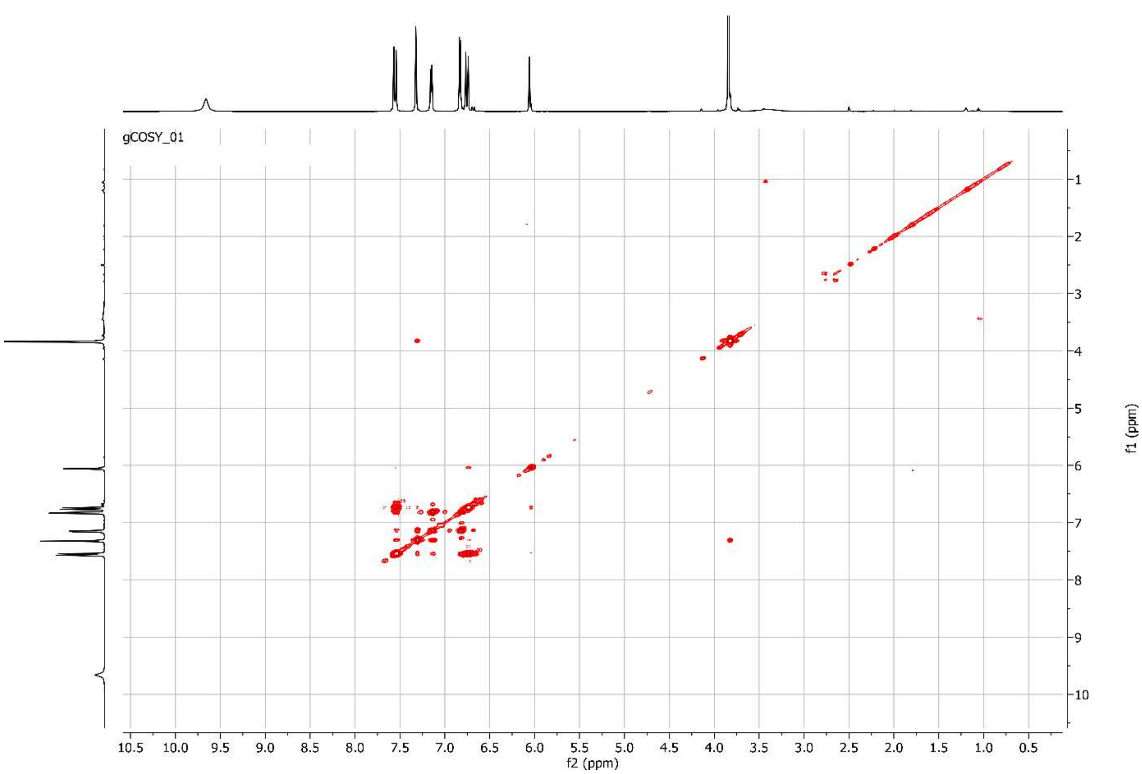

Figure S8: COSY (400 MHz) Spectrum of Curcumin

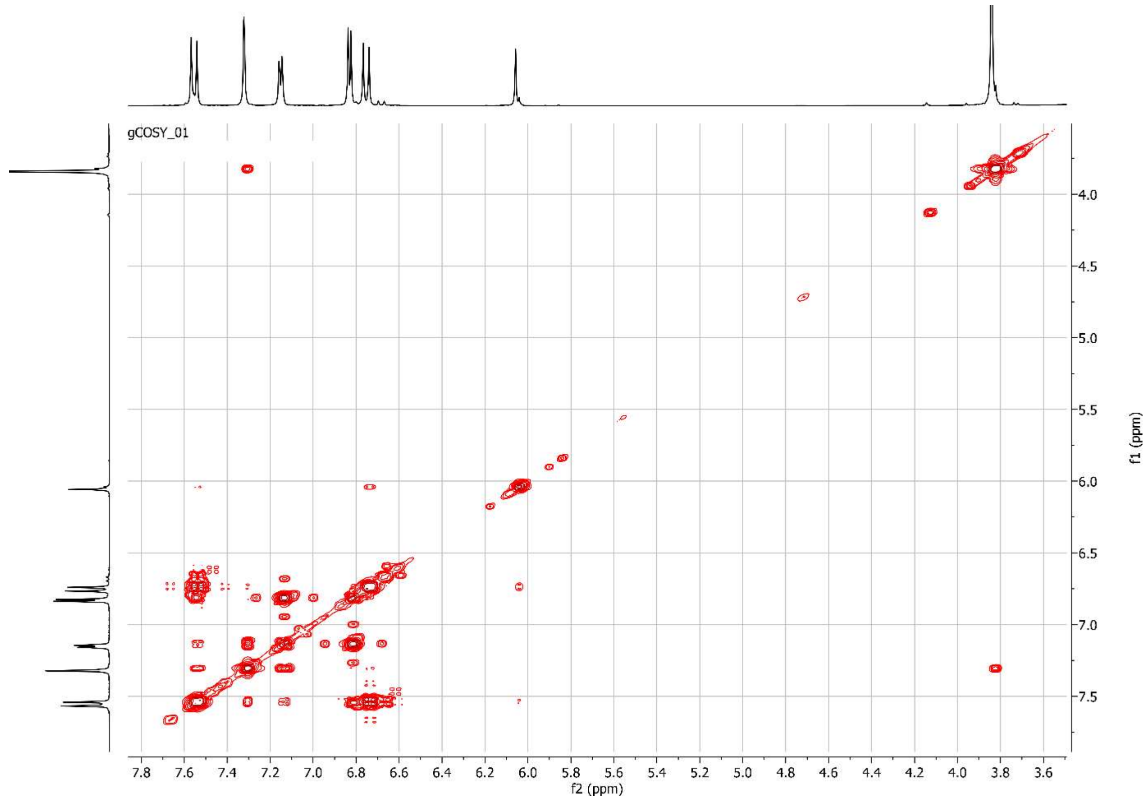

Figure S9: Expansion of the COSY Spectrum of Curcumin

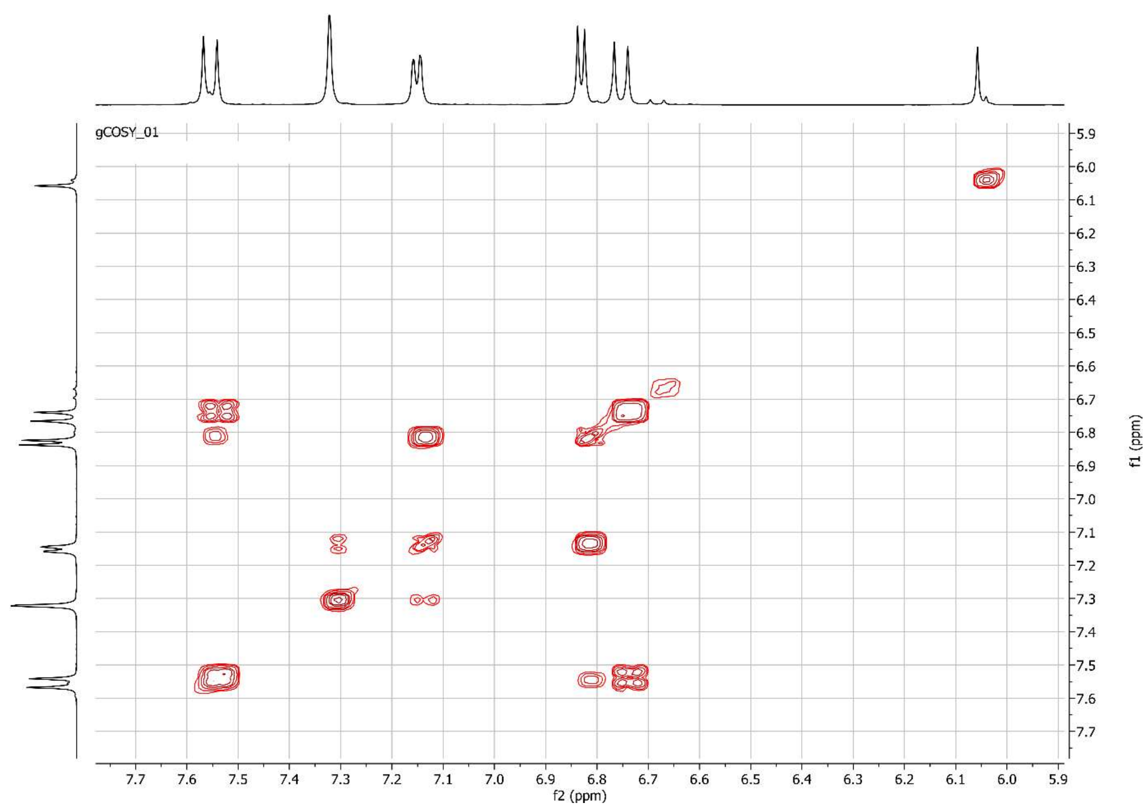

Figure S10: Expansion of the COSY Spectrum of Curcumin

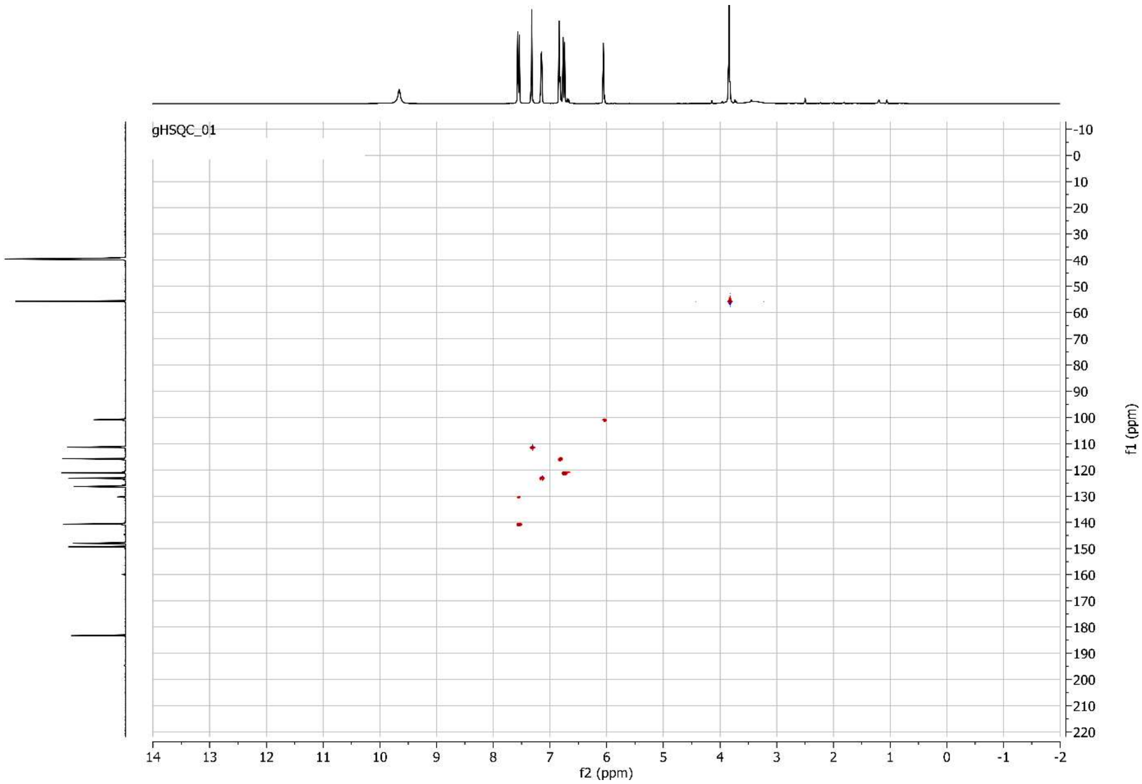

Figure S11: HSQC (400 MHz) Spectrum of Curcumin

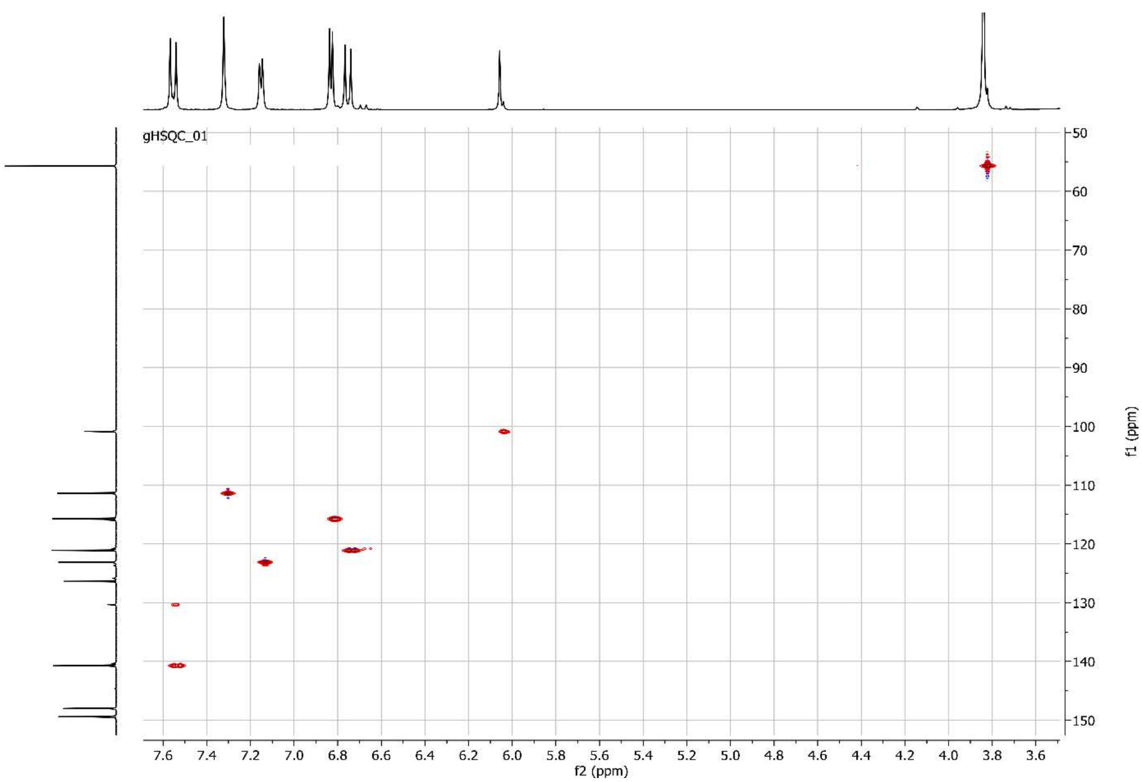

Figure S12: Expansion of the HSQC Spectrum of Curcumin

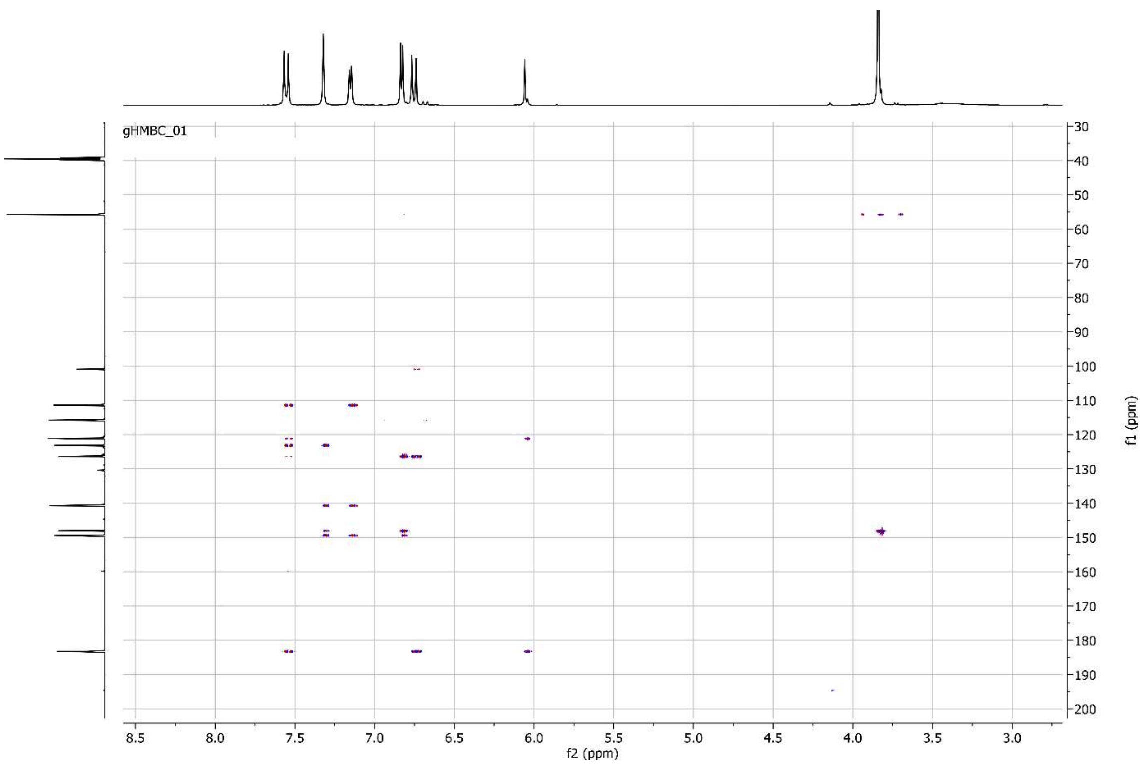

Figure S13: HMBC (400 MHz) Spectrum of Curcumin

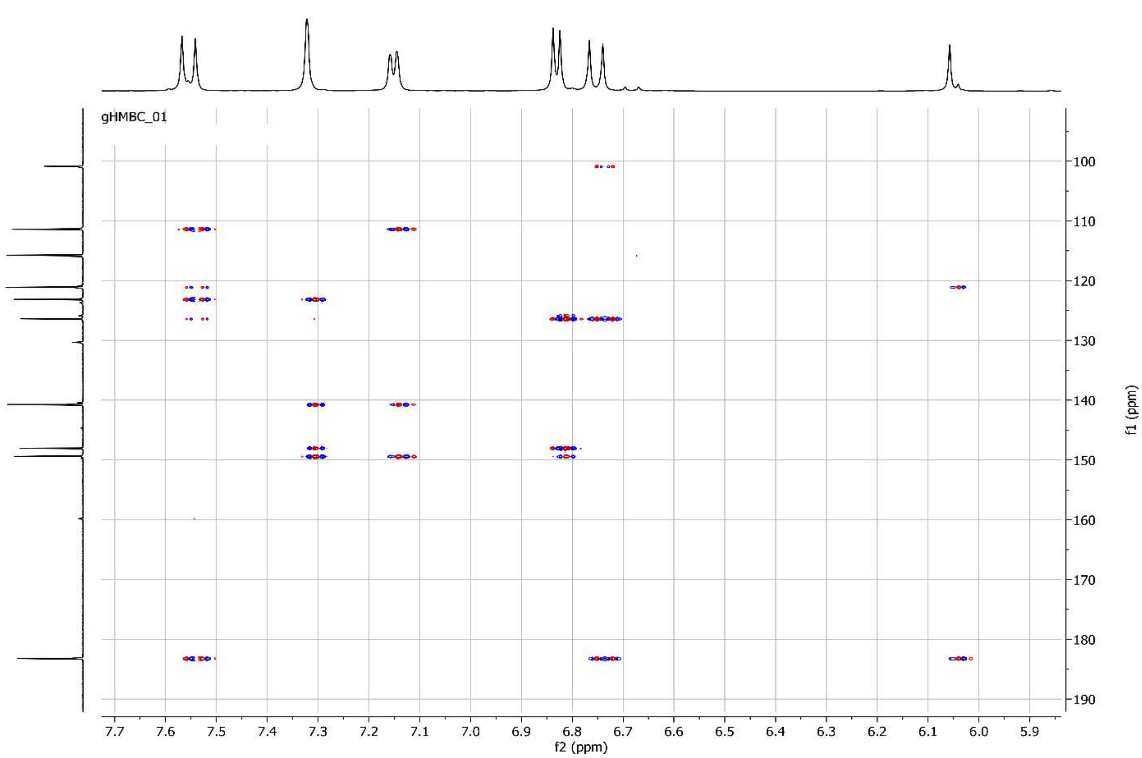

Figure S14: Expansion of HMBC Spectrum of Curcumin (5.8 to 7.8 and 90-190 ppm)

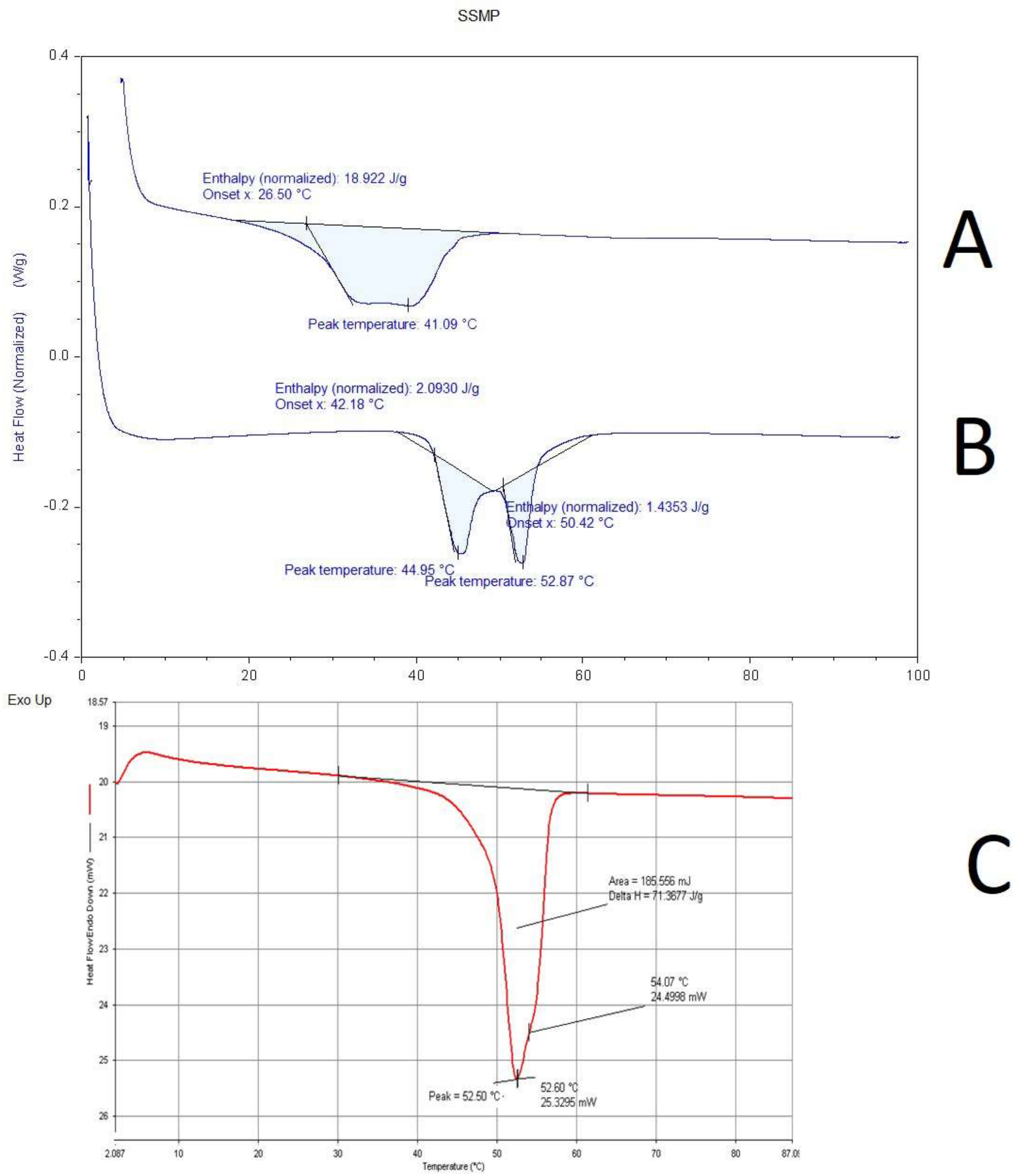

Figure S15: DSC thermogram of A:P-SSM, B:C-SSM and C:free SSM

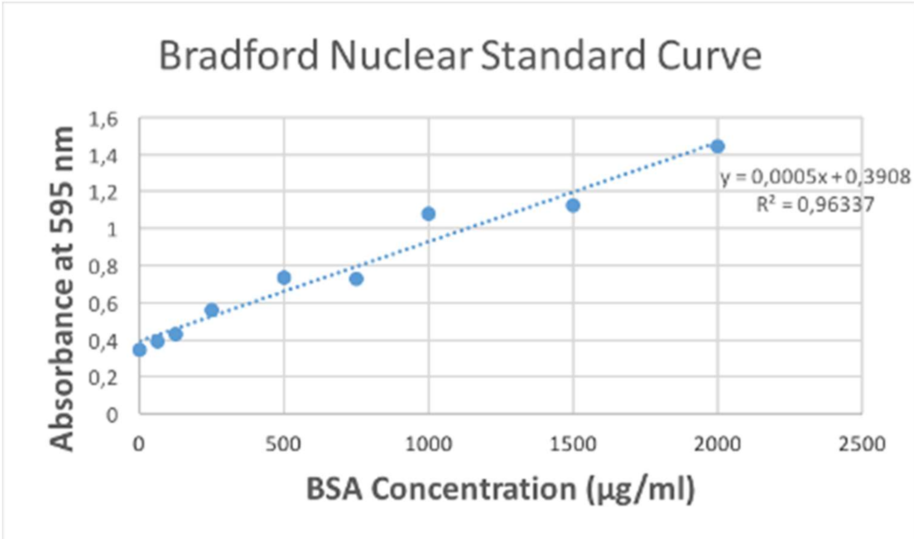

Figure S16: BSA standard curves obtained using Bradford method

Table S2: Statistical analysis results of cytotoxicity assays on MCF-7 cells

Oneway

ANOVA

DATA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	553.674	2	276.837	.347	.713
Within Groups	11981.107	15	798.740		
Total	12534.781	17			

Post Hoc Tests

Multiple Comparisons

	(I) H	(J) H	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Tukey HSD	24	48	7.50482	16.31707	.891	-34.8783	49.8879
		72	13.55939	16.31707	.690	-28.8237	55.9425
	48	24	-7.50482	16.31707	.891	-49.8879	34.8783
		72	6.05457	16.31707	.927	-36.3285	48.4377
	72	24	-13.55939	16.31707	.690	-55.9425	28.8237
		48	-6.05457	16.31707	.927	-48.4377	36.3285
Scheffe	24	48	7.50482	16.31707	.900	-36.7762	51.7859
		72	13.55939	16.31707	.714	-30.7217	57.8404
	48	24	-7.50482	16.31707	.900	-51.7859	36.7762
		72	6.05457	16.31707	.934	-38.2265	50.3356
	72	24	-13.55939	16.31707	.714	-57.8404	30.7217
		48	-6.05457	16.31707	.934	-50.3356	38.2265

Homogeneous Subsets

DATA

	H	N	Subset for alpha = 0.05
			1
Tukey HSD[a]	72	6	56.0134
	48	6	62.0679
	24	6	69.5727
	Sig.		.690
Scheffe[a]	72	6	56.0134
	48	6	62.0679
	24	6	69.5727
	Sig.		.714

Oneway

ANOVA

H24

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5971.692	4	1492.923	2.456	.072
Within Groups	15197.613	25	607.905		
Total	21169.305	29			

Post Hoc Tests

Multiple Comparisons

Dependent Variable:H24

	(I) MATE	(J) MATE	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
Tukey HSD	1	2	-11.57102	14.23499	.924	-53.3773	30.2353
		3	22.99471	14.23499	.502	-18.8116	64.8010
		4	20.20082	14.23499	.622	-21.6055	62.0071
		5	22.67903	14.23499	.515	-19.1273	64.4854
	2	1	11.57102	14.23499	.924	-30.2353	53.3773
		3	34.56574	14.23499	.141	-7.2406	76.3721
		4	31.77184	14.23499	.201	-10.0345	73.5782
		5	34.25005	14.23499	.147	-7.5563	76.0564
	3	1	-22.99471	14.23499	.502	-64.8010	18.8116
		2	-34.56574	14.23499	.141	-76.3721	7.2406
		4	-2.79389	14.23499	1.000	-44.6002	39.0124
		5	-.31568	14.23499	1.000	-42.1220	41.4906
	4	1	-20.20082	14.23499	.622	-62.0071	21.6055
		2	-31.77184	14.23499	.201	-73.5782	10.0345
		3	2.79389	14.23499	1.000	-39.0124	44.6002
		5	2.47821	14.23499	1.000	-39.3281	44.2845
	5	1	-22.67903	14.23499	.515	-64.4854	19.1273
		2	-34.25005	14.23499	.147	-76.0564	7.5563

		3	.31568	14.23499	1.000	-41.4906	42.1220
		4	-2.47821	14.23499	1.000	-44.2845	39.3281
Scheffe	1	2	-11.57102	14.23499	.954	-58.8578	35.7158
		3	22.99471	14.23499	.631	-24.2921	70.2815
		4	20.20082	14.23499	.733	-27.0860	67.4876
		5	22.67903	14.23499	.643	-24.6078	69.9658
	2	1	11.57102	14.23499	.954	-35.7158	58.8578
		3	34.56574	14.23499	.240	-12.7211	81.8526
		4	31.77184	14.23499	.317	-15.5150	79.0587
		5	34.25005	14.23499	.248	-13.0368	81.5369
	3	1	-22.99471	14.23499	.631	-70.2815	24.2921
		2	-34.56574	14.23499	.240	-81.8526	12.7211
		4	-2.79389	14.23499	1.000	-50.0807	44.4929
		5	-.31568	14.23499	1.000	-47.6025	46.9711
	4	1	-20.20082	14.23499	.733	-67.4876	27.0860
		2	-31.77184	14.23499	.317	-79.0587	15.5150
		3	2.79389	14.23499	1.000	-44.4929	50.0807
		5	2.47821	14.23499	1.000	-44.8086	49.7650
	5	1	-22.67903	14.23499	.643	-69.9658	24.6078
		2	-34.25005	14.23499	.248	-81.5369	13.0368
		3	.31568	14.23499	1.000	-46.9711	47.6025
		4	-2.47821	14.23499	1.000	-49.7650	44.8086