

**Supplementary File**

# **Folic Acid Functionalized Diallyl Trisulfide–Solid Lipid Nanoparticles for Targeting Triple Negative Breast Cancer**

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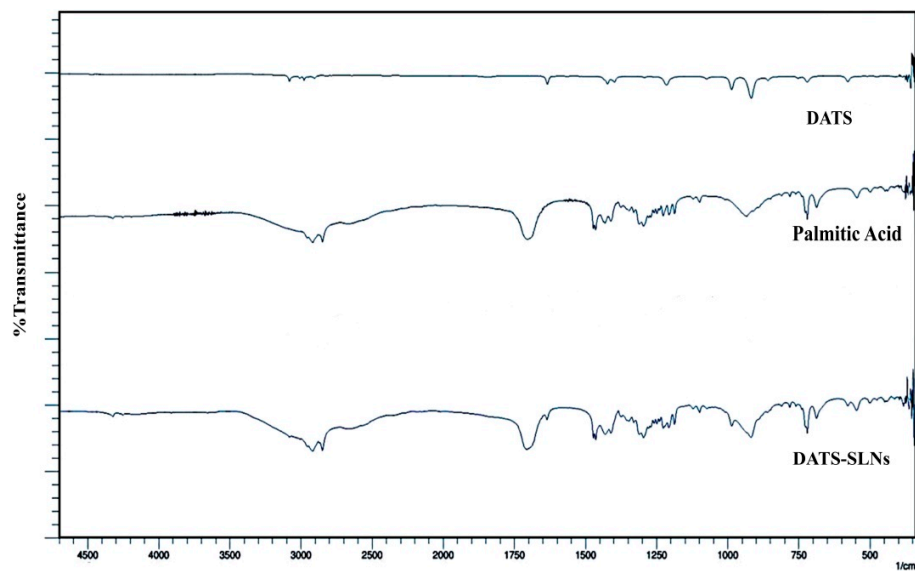


Figure S1. Compatibility study of the lipid Palmitic acid with drug DATS in DATS-SLNs formulation.

Table S1. BBD model for the DATS-SLNs dependent and independent parameters.

Std. Order	Run	Block	Factor 1 A: Lipid (mg)	Factor 2 B: Surfactant (%)	Factor 3 C: Co.surfactant (%)	Response 1: PS (nm)	Response 2: EE (%)
9	1	1	75	1.5	0.25	216.25	40.27
4	2	1	100	2.5	0.5	148.3	55.89
15	3	1	75	2	0.5	174.1	57.32
11	4	1	75	1.5	0.75	149.5	60.18
17	5	1	75	2	0.5	166.4	63.12
1	6	1	50	1.5	0.5	106.29	73.2
6	7	1	100	2	0.25	188.12	59.52

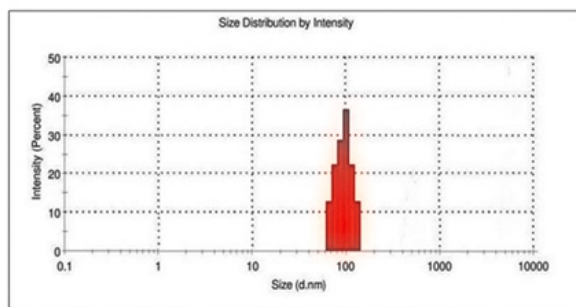
5	8	1	50	2	0.25	140.12	58.7
12	9	1	75	2.5	0.75	192.36	47.4
3	10	1	50	1.5	0.5	106.29	73.2
2	11	1	100	1.5	0.5	202.62	50.71
10	12	1	75	2.5	0.25	117.51	46.34
13	13	1	75	2	0.5	167.23	54.36
16	14	1	75	2	0.5	169.41	60.79
7	15	1	50	1.5	0.5	106.29	73.2
8	16	1	100	2	0.75	214.85	67
14	17	1	75	2	0.5	166.4	60.79

**Table S2.** Analysis of variance (ANOVA) for response surface quadratic model for DATS-SLNs PS.

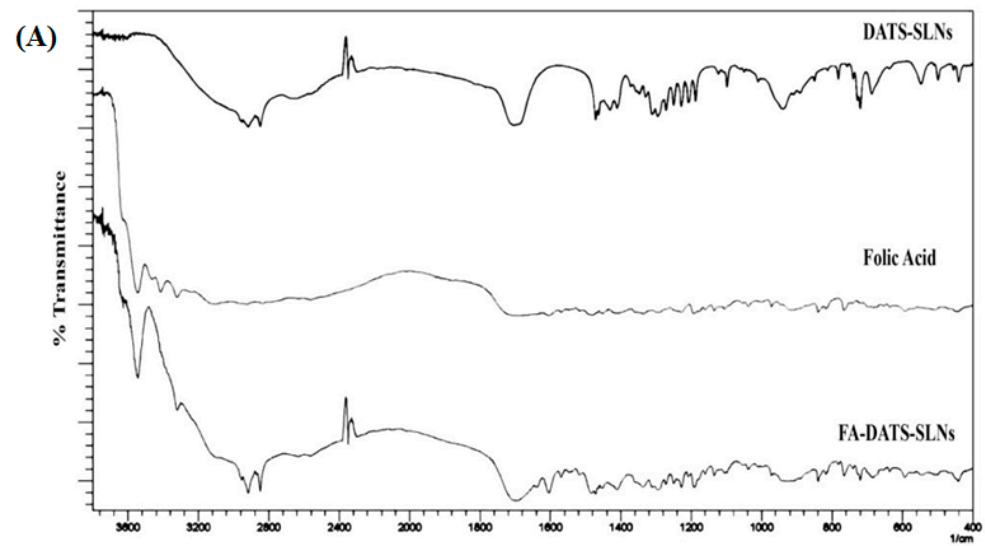
	F value	<i>p</i> Value Prob > F	Remarks
Quadratic model			Significant ( $p < .05$ )
A-Lipid	326.1461617	<.0001	
B-Surfactant	1800.434914	<.0001	
C-Co surfactant	198.3049652	<.0001	
AB	1.995245264	0.1326	
AC	79.17655501	<.0001	
BC	102.6474495	<.0001	
A <sup>2</sup>	749.8825748	<.0001	
B <sup>2</sup>	166.0984932	<.0001	
C <sup>2</sup>	115.785255	<.0001	
Residual	111.0032407	<.0001	
Lack of fit	0.132330929	0.8424	Not significant

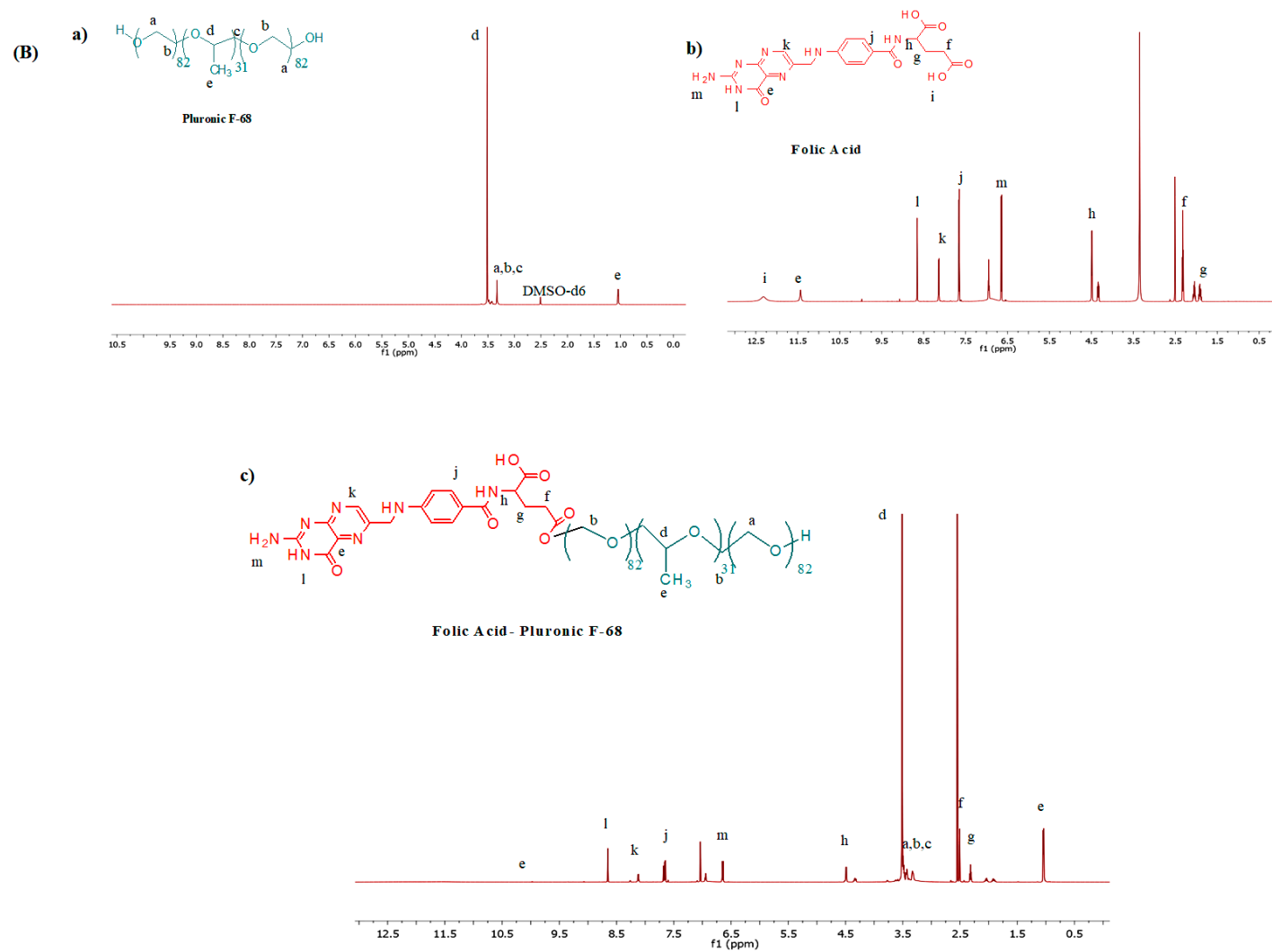
**Table S3.** Analysis of variance (ANOVA) for response surface quadratic model for DATS-SLNs %EE.

	<b>F value</b>	<b><i>p</i> Value Prob &gt; F</b>	
Quadratic model	17.51924	0.0008	Significant ( <i>p</i> < .05)
A-Lipid	13.88987	0.009	
B-Surfactant	1.999535	0.1463	
C-Co surfactant	32.18754	0.0006	
AB	8.798451	0.022	
AC	5.124361	0.062	
BC	12.47919	0.0143	
A^2	35.21838	0.0008	
B^2	46.61263	0.0003	
C^2	0.817536	0.0078	
Residual			
Lack of fit	0.34651	0.7101	Not significant

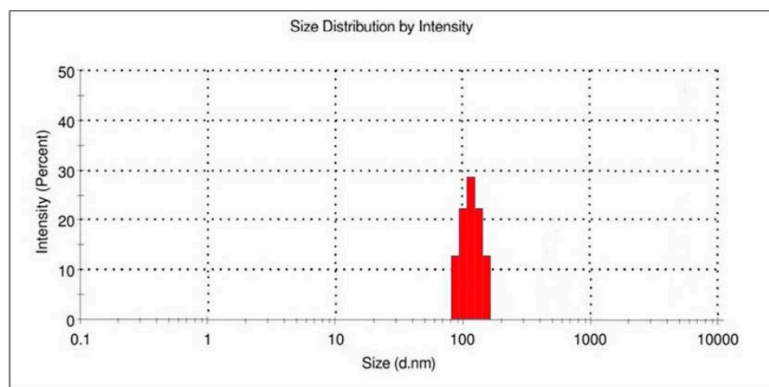


**Figure S2.** Particle size distribution of DATS-SLNs.

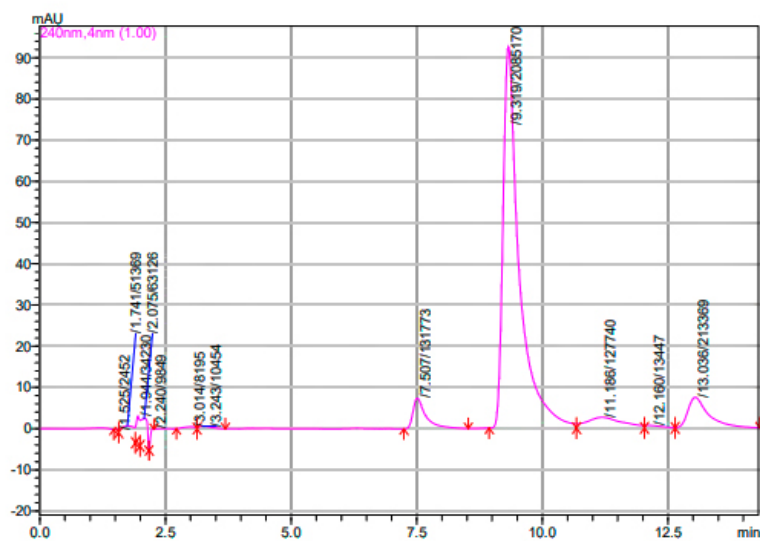




**Figure S3. A:** FTIR conformation of the FA functionalization on the surface of DATS-SLNs. **B.** The NMR spectrum of Pluronic F68, Folic acid and FA-Pluronic F68 for conjugation conformation.



**Figure S4.** Particle size distribution of FA-DATS- SLNs .



**Figure S5.** UFLC chromatogram of DATS using mobile phase of acetonitrile and water (75:25, v/v), flow rate of 1.1 ml/min, C18 (250 mm 4.6 mm) column. The retention time of the DATS was observed at 9.3.