**Supporting information** 

**Development of Pomegranate Extract Loaded Solid Lipid Nanoparticles:** 

Quality by design approach to screen the variables affecting the quality

attributes and characterization

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S1

Estimated Response Surface
Surfactant type=-1.0,Surfactant concentration=6.5,Cosurfactant concentration=87.5,Sonication time=20.0,Sonication amp

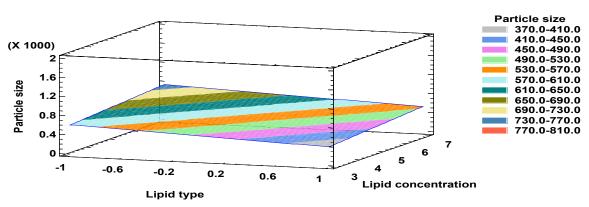


Figure (S1): Estimated three-dimensional response surfaces plot for the effect of lipid type and lipid concentration on the particle size  $(Y_1)$ 

Estimated Response Surface
Lipid type=-1.0,Surfactant type=-1.0,Cosurfactant concentration=87.5,Sonication time=20.0,Sonication amplitude=

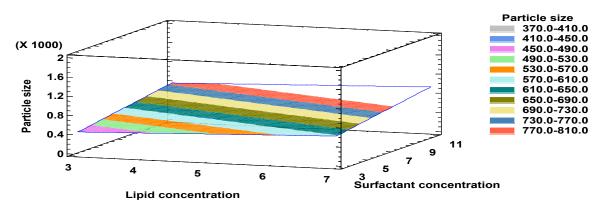


Figure (S2): Estimated three-dimensional response surfaces plot for the effect of lipid concentration and surfactant concentration on the particle size  $(Y_1)$ 

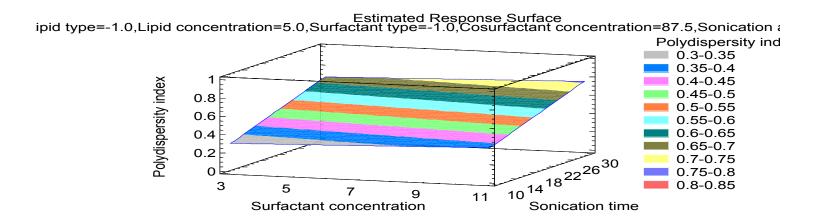


Figure (S3): Estimated three-dimensional response surfaces plot for the effect of surfactant concentration and sonication time on the polydispersity index  $(Y_2)$ 

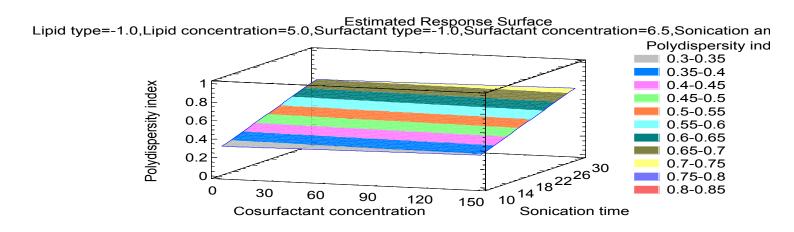


Figure (S4): Estimated three-dimensional response surfaces plot for the effect of co-surfactant concentration and sonication time on the polydispersity index  $(Y_2)$ 

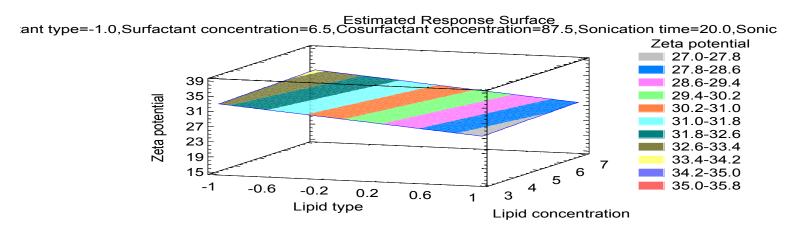


Figure (S5): Estimated three-dimensional response surfaces plot for the effect of lipid type and lipid concentration on the zeta potential  $(Y_3)$ 

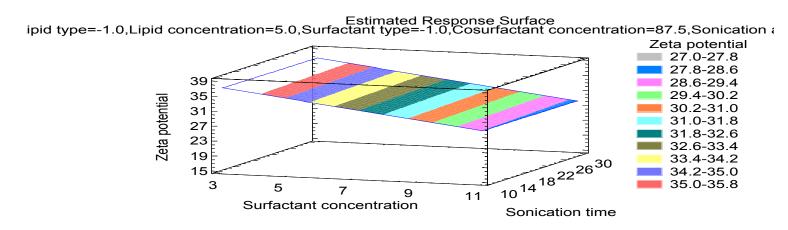


Figure (S6): Estimated three-dimensional response surfaces plot for the effect of surfactant concentration and sonication time on the zeta potential  $(Y_3)$ 

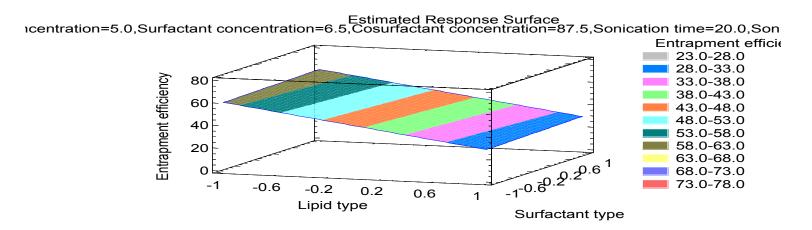


Figure (S7): Estimated three-dimensional response surfaces plot for the effect of lipid type and surfactant type on the entrapment efficiency % (Y<sub>4</sub>)

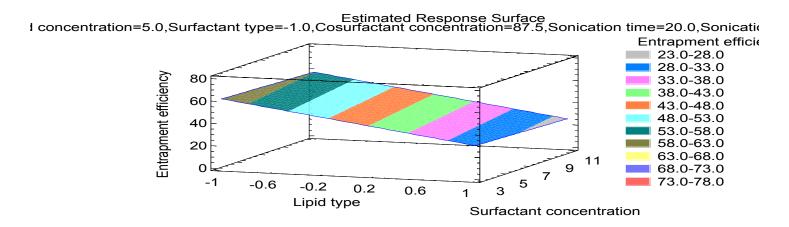


Figure (S8): Estimated three-dimensional response surfaces plot for the effect of lipid type and surfactant concentration on the entrapment efficiency % (Y<sub>4</sub>)

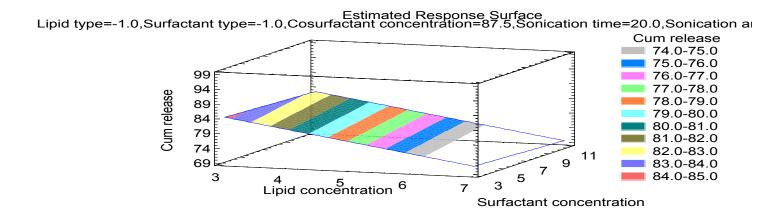


Figure (S9): Estimated three-dimensional response surfaces plot for the effect of lipid concentration and surfactant type on the cumulative % drug release  $(Y_5)$ 

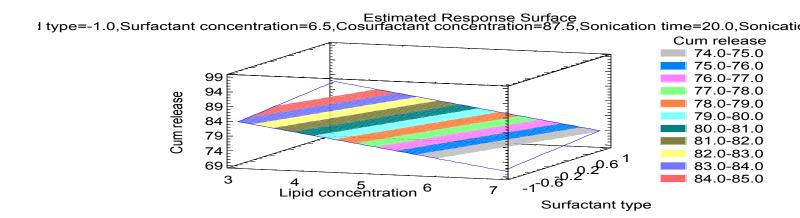


Figure (S10): Estimated three-dimensional response surfaces plot for the effect of lipid concentration and surfactant concentration on the cumulative % drug release (Y<sub>5</sub>)