Electronic Supplementary Material (ESI) for RSC Advances.

Genipin crosslinked soy-whey based bioactive material for atorvastatin loaded nanoparticles: Preparation, characterization and in vivo antihyperlipidemic study

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Supporting Information

Table 1. The crosslinking degree of SPI and WPC with different concentration of Gn

S.No	Gn Concentration (w/w)	Degree of crosslinking (%)
1	0.5	56.35±0.6
2	1	66.72±0.43
3	1.5	71.91±0.38
4	2	66.91±0.87

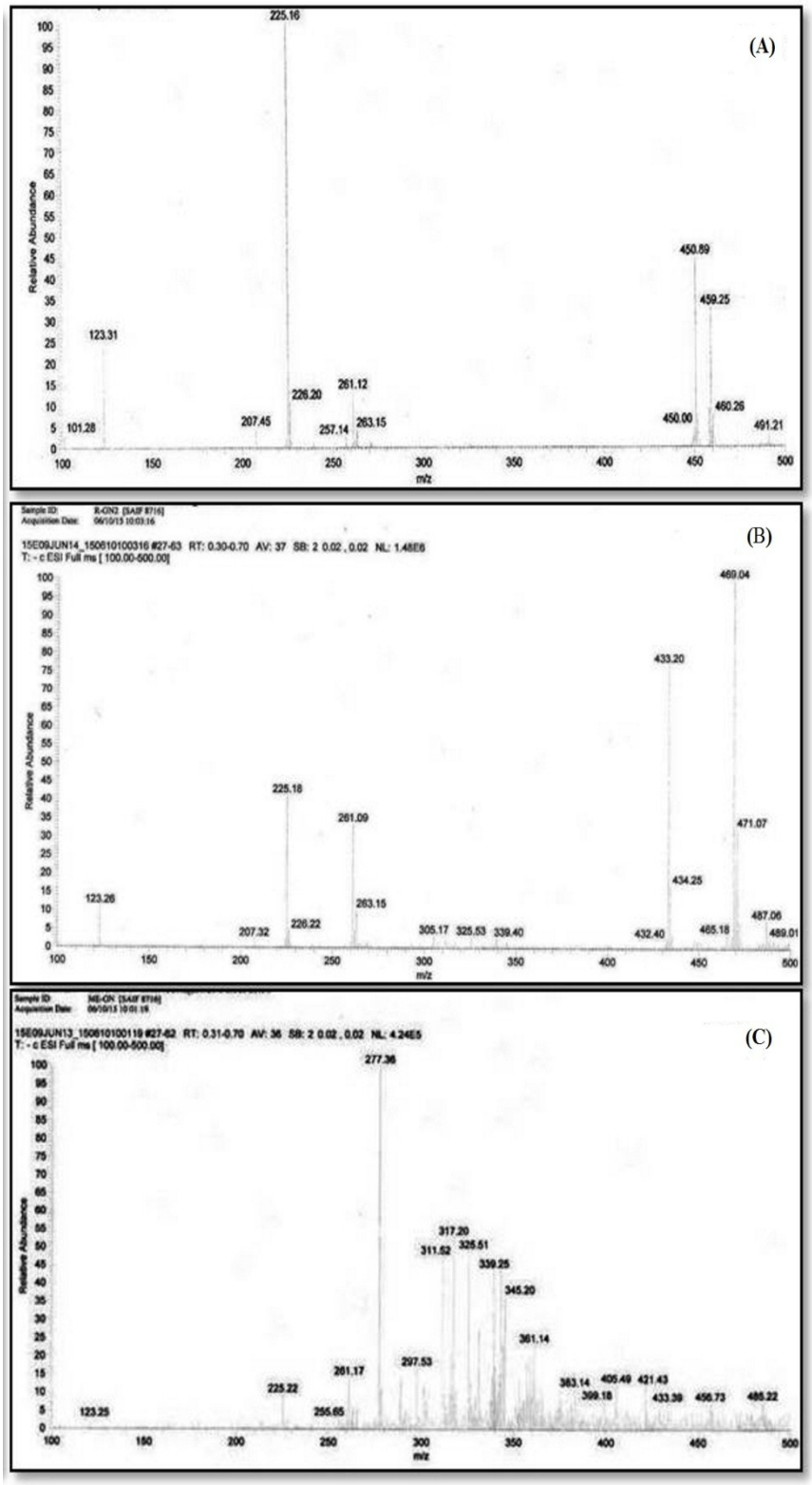

Fig.1. Mass spectrum of (A) STD Gn; standard Gn, (B) R-Gn; recovered Gn and (C) ME-Gn; methanol extracted Gn from cross/SPI-WPC

1. **RSM Plot Analysis**

The 3D response surface plots for particle size, zeta potential, entrapment efficiency (% EE) and drug loading (% DL) were presented in Supplementary Fig.A. 2(A-D). As expected, it was observed in Fig.A 1(A) that increasing cross SPI-WPC concentration in the formulation increased the particle size considerably, while the volume of desolvating agent also increased the particle size. The higher concentration of protein in formulations leads to aggregation which interns responsible for larger particle size. The effect of process variables on zeta potential can be evaluated by observing Fig.A 1(B). Fig.A 1(C) and Fig.A 1(D) revealed that amount of cross/SPI-WPC plays important role in EE and DL. Increase in amount of cross/SPI-WPC also increases the EE and DL.

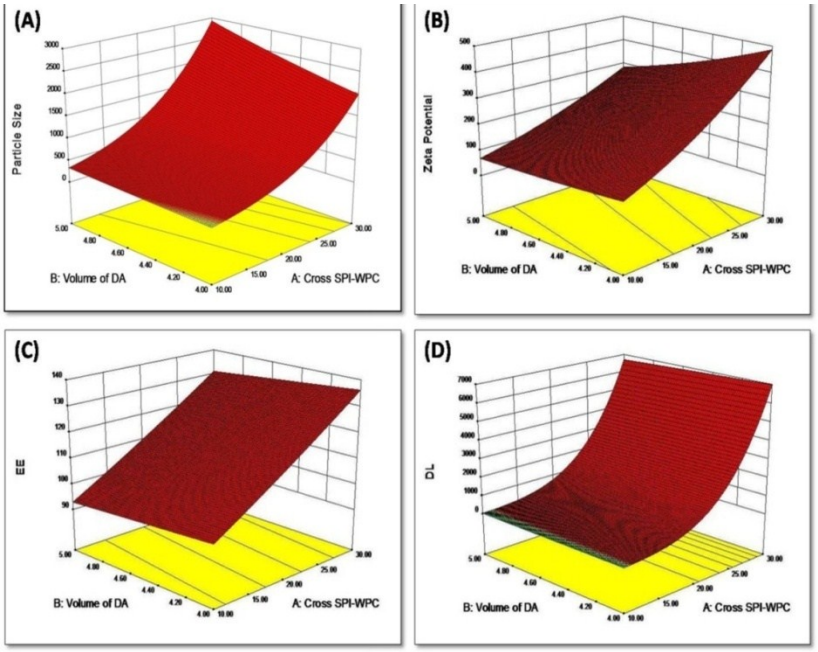

Fig. 2. Three-dimensional (3D) response surface curves for the effects of cross/SPI-WPC (X_1) and volume of desolvating agent (X_2), on particle size (Y_1), zeta potential (Y_2), entrapment efficiency (Y_3), and drug loading (Y_4)

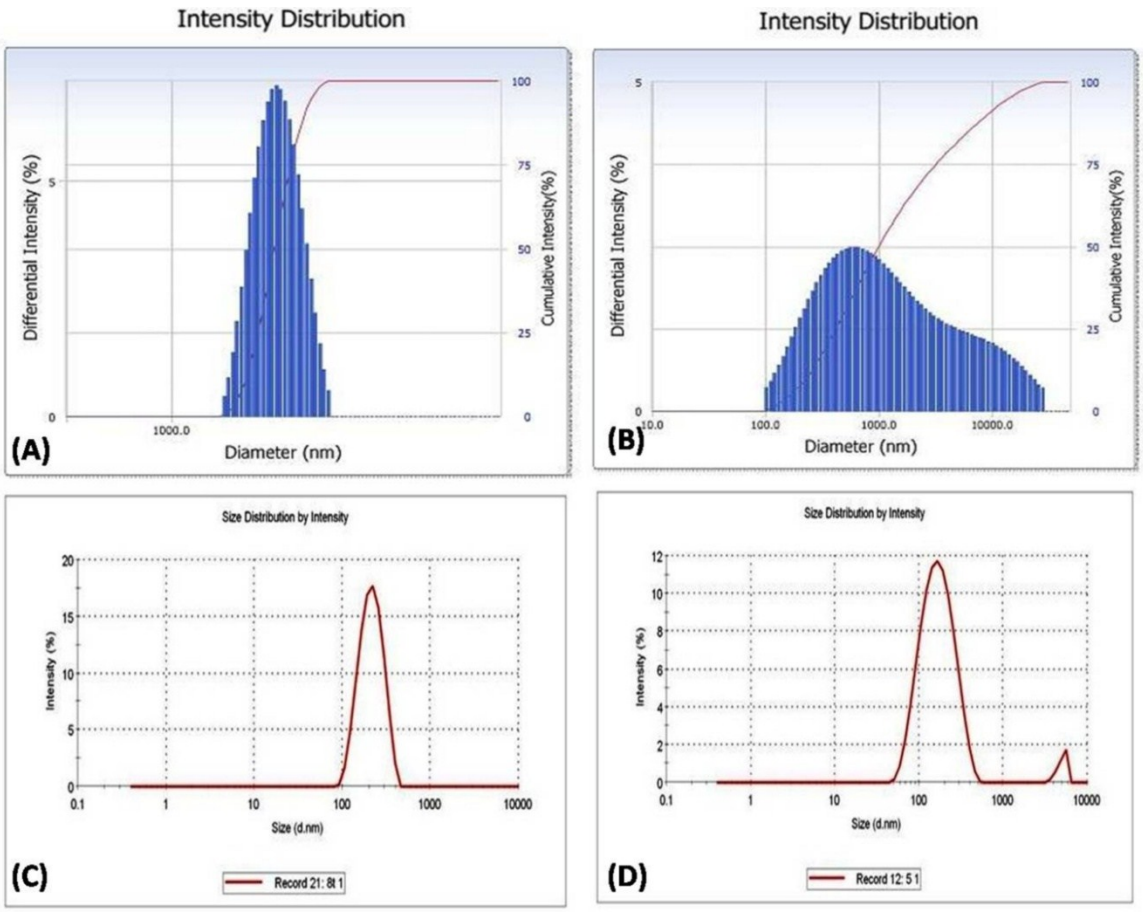

Fig. 3. Particle size distribution of (A) SPI, (B)WPC, (C)SPI-WPC NPs and (D) ATR/SPI-WPC NPs