

Supplementary Materials: Physicochemical Characterizations and Pharmacokinetic Evaluation of Pentazocine Solid Lipid Nanoparticles Against Inflammatory Pain Model

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Table S1. Independent variables predicted by DoE.

Dependent Process Variables	Particle size (nm)	
	Potential (mV)	
	PDI	
	Percentage Entrapment efficiency (EE%)	
Independent process variables	Percentage loading efficiency (LE%)	
	Levels	
	Minimum	Maximum
	-1	+1
Lipid	Stearic acid (S.A)	Cetyl alcohol (C.A)
Surfactant	Tween 80	Tween 20
Surfactant concentration (%)	2	3
Soya lecithin: lipid	2:7	1:8
Acetone: DCM	1:1	1:2
Homogenizer speed (rpm)	15000	16000
Homogenization time (min)	10	15

Table S2. PTZ drug release models at pH 1.2 and 6.8.

Formulation	pH	R ²			Values of “n” for Korsmeyer-Peppas
		Zero-order	1 st -order	Higuchi - model	
PTZ-Sol	1.2	0.8781	0.8894	0.9424	0.527
	6.8	0.9851	0.9956	0.9893	0.650
PTZ-SLNs	1.2	0.8668	0.8790	0.9548	0.494
	6.8	0.9440	0.9673	0.9799	0.655



Figure S1. Fine powder of lyophilized SLN2.

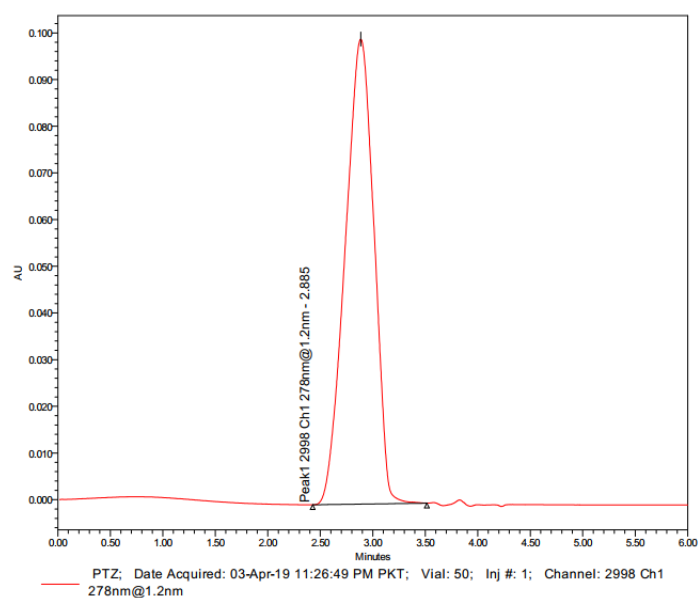


Figure S2. Chromatographic profile of free PTZ.

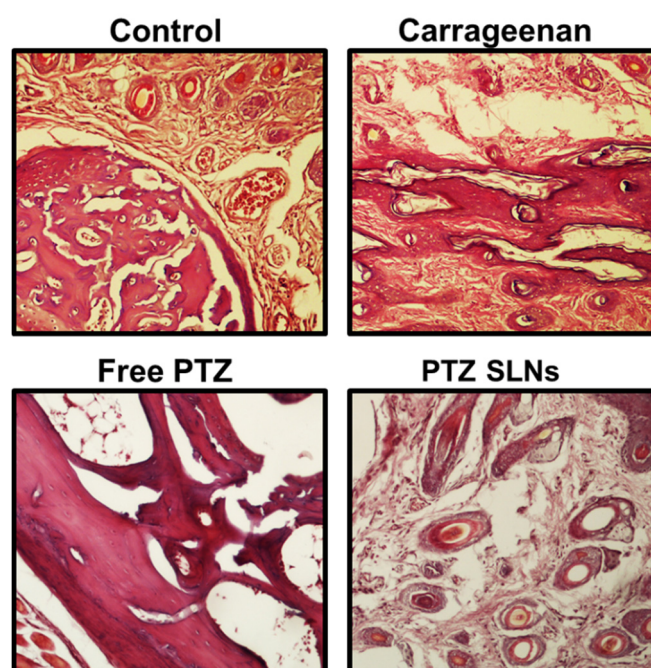


Figure S3. Effects of the PTZ-loaded SLN2 on the paw tissue architecture following carrageenan-induced inflammatory pain in Wistar rats.

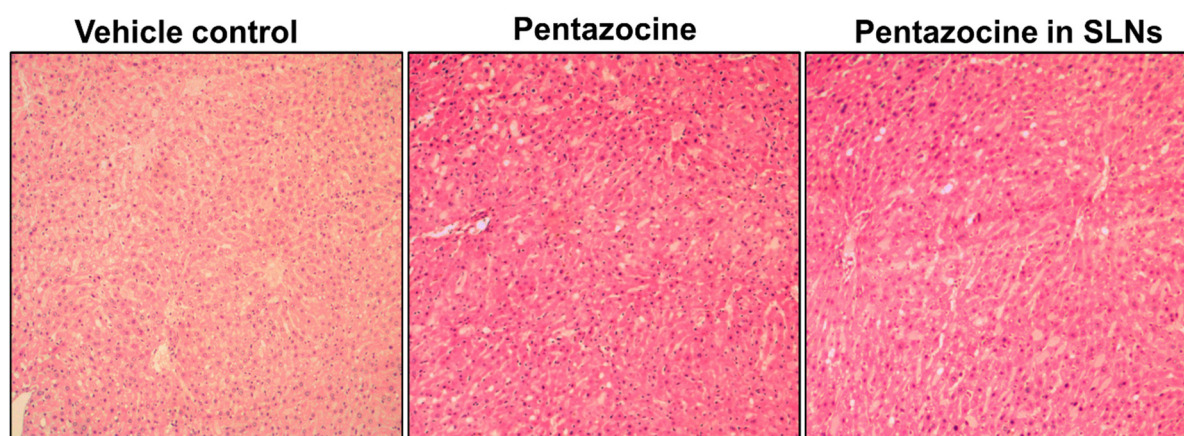


Figure S4. Histological effects of PTZ-loaded SLN2 on the liver of Wistar rats.