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Formulation, Optimization and Evaluation of Solid Lipid Nanoparticles of Lornoxicam

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***SUMMARY*. Lornoxicam loaded solid lipid nanoparticles (SLNs) were prepared by emulsification solvent evaporation technique and optimized by using 2^3 full-factorial design. The responses of the design were analyzed using Design Expert 8.0.7.1 (Stat-Ease Inc., USA). Pareto charts and response surface plots were used to study the effect of variables on the response parameters. Optimized formulation was selected on the basis of software analysis with an overall desirability factor. The average particle size and percent entrapment efficiency of optimized formulation were found to be 180.7 ± 4.4 nm and 91.34 ± 1.98%, respectively. The optimized formulation showed a release of 83.29 ± 4.2% after 8 h. *In vitro* release data were fitted to release kinetics equations, where the release patterns were found to follow Higuchi and Weibull model. The recrystallization index of optimized formulation was found to be 45.36%. The optimized formulation showed a good stability at 4 ± 2 °C during 6 months.**

KEY WORDS: Factorial design, Lornoxicam, Solid lipid nanoparticles, Stability.

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