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(57) Abstract :
The present invention relates to composition of lipid nanoparticles encapsulated with lavender oil (LEO-SLNs) with an objective to improve its stability and oral bioavailability. Further invention relates to process for preparation of the LEO-SLNs is achieved using probe-sonication method. The optimization of the LEO-SLNs is done using 23 factorial approaches. The three factors used included concentration of the lipid, concentration of the surfactant and time of sonication. Each factor is studied at two levels (low and high). Total 8 formulations are prepared and the two response factors used are particle size and encapsulation efficiency. The particle size of the formulations ranged between 98 ± 3.000 to 126 ± 5.5677 nm. The encapsulation efficiency of the SLNs ranged between 75.8 ± 0.1736 to 89.4 ± 0.3055 %.The particle size and zeta potential of the formulation LEO-SLN2 are 98 ± 3.000 nm and -21.8 ± 3.36 mV respectively. The stability of LEO-SLN2 is studied by storing at 4 ± 1 °C for 30 days. The particle size remained stable at the end of the study with drug entrapment of 87.3%. This suggests that the SLNs prepared are stable on storage. The IC50 value of the LEO-SLN2 against DPPH and Hydroxy radical is found to be 57.89 µg/mL and 107.33 µg/mL respectively.

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