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(57) Abstract :
In a present invention relates to Rizatriptan Benzoate Loaded Nanostructured Lipid Carriers prepared for the treatment of migraine. The Nanostructured Lipid Carriers (NLCs) are 2nd generation nanoparticles and are prepared by using Modified Solvent diffusion-Ultrasonication Method. The Design-Expert software with Box-Behnken Design used for the optimization of formulation. The excipients used for NLCs preparation are solid lipid (Glyceryl Monostearate), liquid lipid (Olive oil) along with surfactant and co-surfactant (tween 80 & span 80) and ethanol as an organic solvent. Independent variables selected are X1: Concentration of GMS, X2: Concentration of Tween 80 and X3: Sonication time. The optimization batches are prepared and all three responses estimated are Y1: Particle size, Y2: % Entrapment efficiency and Y3: % Drug release. The obtained data analysed for statistical significance through ANOVA and by response surface graphs. the Batch J selected as optimized batch shown particle size 145 nm, % Entrapment Efficiency 82% and % Drug release 79.39 %. The Zeta potential -20.6 mv and PDI 0.324 confirms the stability of NLCs. The DSC and TEM study confirmed the amorphization and molecular solubilization of RB in NLC and spherical shaped NLC observed. The Ex-Vivo permeation study on sheep nasal mucosa confirmed the permeability of drug from nasal mucosa.

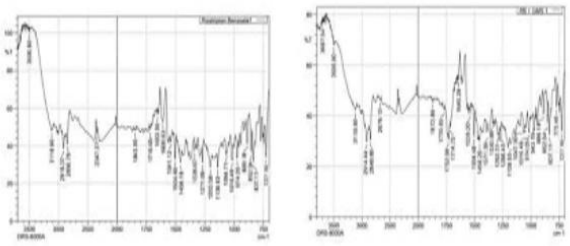

FIGURE 1: FTIR SPECTRUM OF RB AND RB WITH GMS

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