



Formulation, development and optimization of polymeric micelles of Telmisartan for enhancement of solubility using 3² factorial design.

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Abstract: This study describes a 3² full factorial experimental design to optimize the formulation of telmisartan (TEL) loaded polymeric micelles (PM's) by the direct dissolution method. The variables polymer concentration and sonication time were studied at three levels and arranged in a 3² factorial design to study the influence on the response variables particle size and entrapment efficiency (%EE). From the statistical analysis of data polynomial equations were generated. The particle size and %E.E for the 9 batches (F1 to F9) showed a wide variation of 111.5-219.1 nm and 91.32 – 98.23 %, respectively. The physical characteristics of TEL-loaded polymeric micelles were evaluated using a particle size analyzer, differential scanning calorimetry and X-ray diffraction. The results of the optimized formulation showed an average particle size of 111.5 nm and entrapment efficiency of 97.07 %.

Keywords: Telmisartan, Polymeric micelles, 3² factorial design, Solubility enhancement.