



## Formulation and Evaluation of Gliclazide Loaded Controlled Release Microspheres

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**SUMMARY.** The aim of this study was to formulate gliclazide loaded controlled release microspheres. Microspheres were prepared by quasi emulsion solvent diffusion technique using eudragit RLPO, eudragit RSPO and with their various combinations. The effect of different formulation variables (drug-polymer ratio and polymer-polymer ratio) on percent yield, mean particle size, encapsulation efficiency and *in vitro* release of drug were evaluated. *In vivo* test of the optimized formulation was performed on streptozotocin induced type-2 diabetic rat model. The formulated microspheres showed higher encapsulation efficiencies within the range of 72-84 %. Mean particle size, encapsulation efficiency and *in vitro* release were found to be affected by changing in formulation variables. *In vitro* release study revealed the gliclazide release from the microspheres was extended for more than 12 h. *In vivo* hypoglycemic effect of microspheres was more than 25 h suggesting microspheres are a valuable system for sustained delivery of gliclazide.

**KEY WORDS:** Eudragit, Quasi emulsion solvent diffusion, Hypoglycemia.

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