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Preparation and *In Vitro* and *In Vivo* Evaluation of Glipizide Mucoadhesive Microspheres using Factorial Design

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***SUMMARY*. The purpose of the research was to prepare controlled release glipizide mucoadhesive microspheres with a coat consisting of sodium alginate and a mucoadhesive polymer Carbopol 971P. Orifice-ionic gelation method by using 3^2 factorial design were investigated with a view to develop mucoadhesive microspheres of controlled release. The resulting microspheres were discrete, free flowing, spherical and multinucleate monolithic type. Microencapsulation efficiency was in the range of 56-88%. Microspheres exhibit good mucoadhesive property in the falling film test. Glipizide release from the mucoadhesive microspheres was slow and extended over long period of time. Drug release was non-Fickian type. The concentration of carbopol 971P and sodium alginate had a more significant effect on different variables. *In-vivo* testing demonstrated a significant hypoglycemic effect of glipizide.**

KEY WORDS: Factorial design, Glipizide, Mucoadhesive microspheres.

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