Encapsulation and release characteristics of glibenclamide loaded calcium-alginate beads

Dalia Charles-Navarro[I]; Virgilio Bocanegra-García[I]; Isidro Palos[I]; Gildardo Rivera[I,*]; Patricia Esquivel-Ferriño[II]; Sandra Gracia-Vásquez[II]; Rolffy Ortiz-Andrade[III]; Jesús Quiroz-Velásquez[IV]; José Luis Hernández-Mendoza[IV]

[I]Departamento de Farmacia y Química Medicinal, Universidad Autónoma de Tamaulipas, Reynosa, México
[II]Departamento de Biofarmacia, Universidad Autónoma de Nuevo León, San Nicolás de los Garza, México
[III]Facultad de Química, Universidad Autónoma de Yucatán, Mérida, México
[IV]Centro de Biotecnología Genómica, Instituto Politécnico Nacional, Reynosa, México

---

ABSTRACT

The aims of this study were to formulate calcium-alginate beads containing glibenclamide, characterize the resulting microparticles, evaluate the release characteristics of this type of delivery system in an *in vitro* dissolution test, and compare it with two commercially available trademarks (Daonil® and Glibetab®). We obtained glibenclamide loaded calcium-alginate beads with a rough surface and a particle size between 150-200 µm. For the *in vitro* dissolution test Daonil® at 45 min showed a Q > 70%, whereas Glibetab® and glibenclamide calcium-alginate beads a Q < 70%; in spite of that glibenclamide calcium–alginate beads showed significant release properties.