

Brinzolamide loaded-polymeric nanoparticles

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Abstract

The objective of the present study was to investigate the ability to formulate brinzolamide in the form of polylactic-co-glycolic acid (PLGA) nanoparticles. In this study brinzolamide-loaded nanoparticles were formulated according to the emulsification/solvent evaporation technique using the biodegradable PLGA. The effect of surfactant type and its percentage in the preparation were investigated. The investigated PLGA polymer with lactide: glycolide monomers ratio of 75:25 was able to develop PLGA vesicular system using the investigated surfactants. Brinzolamide-loaded nanoparticles prepared using PLGA with Pluronic acid F68 in the aqueous phase and 1 % Brij 97 in the organic phase showed the smallest particle size value (441.80 ± 72.97 nm). Brinzolamide-loaded nanoparticles prepared using PLGA with Pluronic acid F68 in aqueous phase and 2 % polysorbate 80 in organic phase had the largest encapsulation efficiency and drug loading values (47.86 ± 0.97 % and 38.76 %, respectively).

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