

# Brinzolamide loaded-polymeric nanoparticles

*Azza Ahmed Mohamed Mahmoud ,Hamed A. Salama, M. Ghorab, Azza A. Mahmoud and Mayssa Abdel Hady*

*Associate Professor of Pharmaceutical Technology*

## 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 ( $441.80 \pm 72.97$  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 ( $47.86 \pm 0.97$  % and  $38.76$  %, respectively).

*Current Science International - 2016, June*