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Preparation and characterization of anticancer drug-loaded implantable PLGA microparticles

Meltem ÇETİN<sup>1</sup>, İmran VURAL<sup>2</sup>, Alptuğ ATILA<sup>3</sup>, Yücel KADIOĞLU<sup>3</sup>

<sup>1</sup>Department of Pharmaceutical Technology, Faculty of Pharmacy, Atatürk University,  
25240 Erzurum-TURKEY

e-mail: melcetin@hotmail.com

<sup>2</sup>Department of Pharmaceutical Technology, Faculty of Pharmacy, Hacettepe University,  
06100 Ankara-TURKEY

<sup>3</sup>Department of Analytical Chemistry, Atatürk University, 25240 Erzurum-TURKEY

**Abstract:** This article describes the preparation and characterization of anticancer drug-loaded poly (lactide-co-glycolide) (PLGA) microparticles. PLGA microparticles loaded with doxorubicin HCl (DOX) were prepared via o/w emulsion solvent evaporation. The release characteristics, encapsulation efficiency, size, and morphology of the PLGA microparticles were also determined. A cytotoxicity test was performed by using Glioma RG2 cancer cells to investigate the cytotoxicity of DOX-loaded PLGA microparticles. The DOX-loaded PLGA microparticles had an average diameter of 500 ± 9 nm. The DOX encapsulation efficiency and drug loading were 22.75% and 0.78%, respectively. DOX-loaded PLGA microparticles displayed a significant cytotoxicity toward the RG2 cells as compared to the unloaded PLGA

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