The Fabrication of Electrosprayed Minocycline Loaded PLGA Microparticles

Ledezma, Julio (School: Brownsville Early College High School)

Advances in current treatment methods for Glioblastoma Multiforme (GBM), surgery followed by chemotherapy and radiotherapy and surgery, have not improved the prognosis of GBM. The objective of this study is to fabricate minocycline loaded PLGA microparticles with high drug loading, loading efficiency, and effective against glioblastoma cells. The method used to fabricate the minocycline loaded PLGA microparticles was vertical electrospraying, and different parameters were evaluated to successfully fabricate these microparticles. It was determined that the 70:30 DCM:Methanol solvent was optimal for the creation of microparticles with high drug loading and were effective in resulting in U87 glioblastoma cell death and thus, a promising biomaterial for the treatment of glioblastoma.

Awards Won: