ABSTRACT

A new peptide drug termed aCT1 (alpha connexin carboxy terminus 1) has been found to have several applications, including healing chronic wounds and reducing the chance of cancer cells to become resistant to anti-cancer drugs. However, the drug is a small molecule and is quickly digested by the body over the course of several hours. This contrasts with the need to have the drug in the body for days to weeks at a time. In order to reduce the need for multiple doses of the drug, it has been encapsulated in biodegradable poly(lactic-co-glycolic acid) on the nanometer scale. These particles have been size-optimized for sterilization by filtration. Degradation and release of the nanospheres and drug, respectively, were taken over the course of three weeks.

BIOSKETCH:

Rose Roberts is a PhD candidate in materials science and engineering at Virginia Tech working under Dr. Foster. She received her B.S. from Purdue University in 2012 in chemical engineering with a concentration in energy and the environment and minors in electrical engineering and chemistry. While an undergraduate student, Rose participated in the Summer Undergraduate Research Fellowship program at Purdue and the Research Experience for Undergrads at the University of Akron. She has also had two summer internships at Corning, working on particulate filters and catalytic converter substrates. In 2015, she was awarded a scholarship from the Adhesive Manufacturers Association for her work with polymer nanoparticle systems and their potential use in adhesives. Rose is currently working on a peptide drug release system from degradable nanoparticles.