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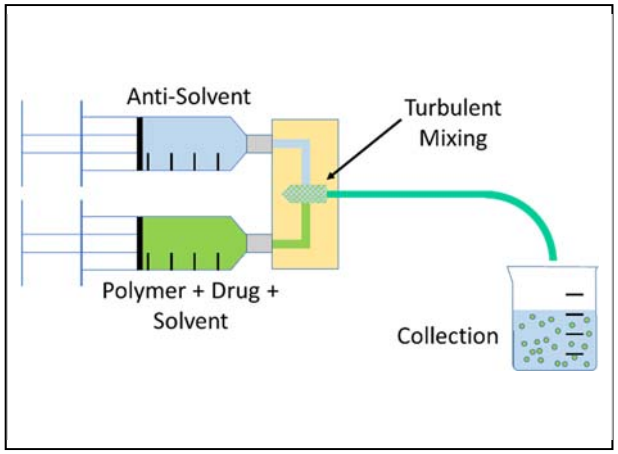
Encapsulation of αCT1 Peptide Drug for Glioblastoma Applications

Rose Roberts[1], Samy Lamouille[2,3], Rob Gourdie[2,4,5,6,7], and E. Johan Foster[1]

[1]Materials Science and Engineering Department and Macromolecule Innovation Institute, Virginia Tech, Blacksburg, VA
[2]Virginia Tech Carilion Research Institute and School of Medicine, Roanoke, VA
[3]Department of Biological Sciences, Virginia Polytechnic Institute and State University, Blacksburg, Virginia
[4]Faculty of Health Science, Virginia Tech, Blacksburg VA
[5]Department of Internal Medicine and Department of Emergency Medicine, Virginia Tech Carilion School of Medicine, Roanoke, VA
[6]Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, Blacksburg, VA
[7]Virginia Tech Carilion Research Institute, Center for Heart and Regenerative Medicine Research, Roanoke, VA.

Abstract

A new peptide drug termed αCT1 (alpha connexin carboxy terminus 1) has been found to have several applications, including healing chronic wounds and limiting cancer cell resistance to anti-cancer drugs. However, the drug is a small peptide and is quickly degraded 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). Nanoparticles encapsulating αCT1 are produced using flash nanoprecipitation. Flash nanoprecipitation produces a higher drug loading compared to previously used encapsulation methods



Biography

Ms. Rose Roberts is working towards her Ph.D. and began working under Dr. Johan Foster in the spring semester of 2015. Her work characterizes and synthesizes nanoparticles for drug delivery purposes, including encapsulation and controlled release of αCT1 peptide for glioblastoma applications. Ms. Roberts was the data manager for the Journal of Undergraduate Materials Research (JUMR) from 2014-2016 and was a co-organizer for the TMS 2018 Student-Run Symposium. She is currently a teaching assistant for the MSE Biomimetics and Polymer Engineering courses and is expecting to graduate in December 2018.