

PI: Wilbur Bowne & Hao Cheng

Institution: Drexel University

Award Year: 2015

Project Title: "Developing a Novel Drug Delivery Platform for Targeting Hyaluronan Expression in Pseudomyxoma Peritonei through Human Sample Analysis and In Vivo Studies"

Project Status: Active

Update 1 (04-2017)

Our collaborative team has collected sample mucin and tumor samples from multiple patients with pseudomyxoma peritonei (PMP) treated with cytoreductive and hyperthermic intraperitoneal chemotherapy in order to facilitate testing of nanoparticle penetration through the mucinous matrix. Despite our initial studies demonstrating a lack of hyaluronic acid in the mucinous environment produced by certain cancer cells, we have adjusted our approach, employing re-configured nanoparticles that have lower binding affinity for surface proteins. We have demonstrated a significant increase in diffusion through this mucin with the redesigned nanoparticles. At the same time, we have continued work on developing a mouse model of peritoneal metastases that will allow for further in vivo studies of this disease. We will continue to collect samples from patients treated our institution to use in a mouse model derived from these tumors.