

 [Print this Page for Your Records](#)[Close Window](#)

In vivo MicroCT Imaging Efficacy of a New Hepatocyte-Selective High Concentration Polyiodinated Triglyceride Lipid Emulsion Formulation in Normal Mouse Models

Category: Molecular Imaging in the Drug Discovery Process

Presentation Time: Saturday, 12:00 noon - 1:00 p.m.

Giangthy Ton¹, William Dow², Alexandre Belenkov², Cindy Burrascano³, Jamey Weichert¹, ¹University of Wisconsin, Madison, USA;

²Advanced Research Technologies Inc., Montreal, Canada; ³Alerion Biomedical Inc., San Diego, USA. Contact e-mail: gnton@hosp.wisc.edu

Presentation Number: 827

Poster Board Number: 103

Objectives: A chylomicron-like lipid emulsion delivery system containing a polyiodinated triglyceride (ITG) for selective delivery of ITG analogs directly into the hepatic parenchyma following administration has been developed and previously reported. Recently, studies were conducted to characterize the in vivo CT imaging efficacy of a new lipid formulation containing substantially higher iodine content than prior formulations.

Materials and Methods: Two ITG lipid emulsion formulations containing total iodine concentration of either 50 or 150 mg I/mL were administered to two strains of mice (Balb/c and C57Bl/6) intravenously at an equivalent dose of 750 mg I/kg. Anesthetized animals (n=3) were scanned using a Siemens MicroCAT II system (70-80 kVp, 500 μ A, 720 steps at 91- μ m resolution) at predetermined time points prior to and after injection. Relative tissue densities were determined in blood and liver at indicated time points for comparison between each group. In addition, animals were monitored for signs of abnormal behaviors and for changes in total body weight throughout the study.

Results: For both formulations, liver enhancement was observed at early as 10 minutes following administration of each formulation. At the equivalent test dose of 750 mg I/kg, improved CT efficacy was observed with the highly concentrated preparation, indicated by a higher maximum liver intensity and a shorter time to peak concentration. Both formulations displayed the expected hepatobiliary clearance, as evidenced by the gallbladder and intestinal enhancement pattern. Both liver agents were well tolerated in all mice tested.

Conclusions: In the animal models tested, CT imaging efficacy was dependent on formulation composition. Thus, administration of ITG liver contrast agent in the higher concentration lipid preparation resulted in improved liver enhancement while also reducing the administered dose volume significantly. This is expected to improve animal tolerance of the preparation, and should expand the range of possible dosing options, including multimodality studies.

OASIS - Online Abstract Submission and Invitation System™ ©1996-2006, Coe-Truman Technologies, Inc.