Seminar

Metabolic MRI with ^{13}C labeled endogenous substrates hyperpolarized with dynamic nuclear polarization: Pre-clinical and Clinical applications in Cancer Imaging

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The tumor microenvironment is an important determinant in treatment outcomes with chemotherapy, radiotherapy and immunotherapy. The microenvironment in solid tumors is characterized by regions of poor perfusion, hypoxia and low pH. Biochemically, tumor cells, both in vitro and in vivo display the aerobic glycolysis phenotype. Imaging techniques which provide biomarkers reporting on these features will be useful in: a) providing diagnostic/prognostic information; and b) developing appropriate treatments based on a priori information of the tumor microenvironment.

Metabolic MRI using hyperpolarized ^{13}C labeled pyruvate which provides biochemical profiles of tumors is used to probe the microenvironments in mouse models of human cancers to characterize their metabolic and physiologic status. Data will be presented to demonstrate the value of molecular imaging techniques and the imaging biomarkers obtained from these scans in making clinical decisions. Recent clinical data will also be shown.

Thursday, Mar 16th 2017

4:00 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS