McGill DEPARTMENT OF BIOENGINEERING

TWO SEMINARS IN BIOENGINEERING

RESEARCH NETWORK IN BRAZIL: THE NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY IN NANOBIOTECHNOLOGY (INCT IN NANOBIOTECHNOLOGY)

Prof. Ricardo Bentes de Azevedo // Department of Genetics and Morphology // University of Brasília

INCT in Nanobiotechnology strengthens the approach for utilization of nanostructured complexes, built from drug or biomolecule linkage onto nanostructured materials (magnetic and non-magnetic), for use in human and veterinary health care. In a general context, INCT in Nanobiotechnology program comprehends the whole knowledge chain; by using basic nanostructure properties calculations, production route of nanostructured complexes, complex characterization methodologies (drug + carrier or biomolecule + carrier), execution of pre-clinical tests protocols and of clinical tests complexes, culminating with technology transfer into productive sectors. Nanostructured materials to be developed will be magnetic (containing cubical ferrites) or non-magnetic, such as magnetic biocompatible fluids, liposomes, magnetoliposomes, nanocapsules, nanoemulsions, magnetic nanocapsules and nanoemulsions.

NANOTOXICITY INVESTIGATION OF MAGNETIC SYSTEMS DESIGNED FOR CANCER TREATMENT

Prof. Zulmira Lacava // Institute of Biology // University of Brasília

The need for establishing the boundaries of human and environmental safety while using and disposing nanomaterials has been a key issue in the last years. In accordance, pre-clinical tests involving nanomaterials stepping up from in vitro to robust in vivo models represents an important approach in the nanotoxicity investigation. Among the huge variety of nanoscaled materials specially designed for biomedical applications, surface functionalized superparamagnetic iron oxide (SPIO) particles represent the most promising material platform to build complex magnetic systems, as for instance the magnetic drug delivery system (MDDS). Noteworthy, MDDS may act in both the diagnostic and treatment of cancer. The present talk will focus on strategies to determine the biocompatibility/toxicity status of different developed MDDS.

TUESDAY, OCTOBER 22
MACDONALD ENGINEERING BUILDING, ROOM 267
1:30 PM