



Biomedical Technology and Cell Therapy Research Laboratory

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Our Research at a Glance



The primary research interests of this laboratory are in several innovative areas of artificial cell, microencapsulation, nanomedicine, regenerative medicine, biomaterial and medical device engineering, cell therapy, cell and tissue engineering, and innovative biomedical technology developments. The research is focused for the development of new medical treatment strategies, including novel cell and drug-based therapies.

In recent years, the research team has contributed to the advancement and development of bioengineered delivery systems, targeted controlled-release delivery systems, targeted drug delivery systems and cell delivery systems. The focus is on designing formulations using mammalian cells, bacterial cells and other microorganisms, enzymes, small peptides, DNA and other active drugs. These biotherapeutics are capable of targeting specific sites and are used in our research to design formulation for clinical applications. Specifically, the research team is investigating cholesterol lowering formulations, fatty liver therapeutics, cellular therapeutic protein deliveries, novel treatment methods for use in neurodegenerative diseases, treatment methods for inflammatory bowel diseases, bionic artificial kidney, liver, skin and other organ substitutes, formulations for use in colon, breast cancer, and other diseases.

In addition, the research team is developing systems that integrate bioengineering, tissue engineering with gene and cell therapy methods with the aim to get therapeutic products to the targeted sites and maintain their functions. The present engineered therapy formulations and devices have been applied in numerous areas including biomedical studies, clinical settings, bioengineering, and industrial applications.

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Contact

Biomedical Technology
and Cell Therapy Research
Laboratory
Department of Biomedical
Engineering
Faculty of Medicine
Duff Medical Building
3775 University Street
McGill University
Montréal
Quebec H3A 2B4
Canada

Phone: 1 (514) 398-2736

Fax: 1 (514) 398-7461



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