Ontario Ginseng Innovation & Research Consortium

Opportunity for Joint Venture and Contract Research

III. Pre-Clinical Studies
Team lead: Ed Lui (ed.lui@schulich.uwo.ca)

Cardiovascular
M. Karmazyn: Heart failure
Cultured rat ventricular myocytes

E. Lui: Vascular protective effects
Chorion allantoic membrane assay

K. Rogers: Atherosclerosis imaging techniques
G. Feng: Myocardial infarction
J. Ciriello: Experimental hypertension

Immunology, Infection & Inflammation
J. Madrena: T cell response

Z. Suntres: Anti-infective effects
E. Lui: Macrophage and anti-inflammatory agents

J. Henry: Rheumatoid arthritis
Normal neurone
Arthritic neurone

C. Bear & D. Li: Cystic Fibrosis

Metabolic Disorders and Stress
M. Bakovic: Obesity, lipid reduction

E. Noble: Stress and endurance
S. Chakrabarti & J. Trevithick: Diabetic complications; antioxidants

Reproductive Health
L. Coolen: Erectile dysfunction
V. Feyles: Fetal health

Hierarchy of Evidence

Systematic Reviews
Cohort Studies
Case Control Studies
Case Series
Case Reports
Ideas, Editorial, Opinions
Animal research
In vitro ('test tube') research

IV. Systems Biology
Systems Biology Approach: Genomics, Proteomics, Metabolomics

Overall Objectives: To fully develop the commercial market potential of Ontario-grown American ginseng by using genomics and other 'omics' platform technologies to study critical and relevant biological mechanisms and pathways at the organism level.

Study #1: Agriculture
Generating superior Ontario-based germplasms that are pest-resistant and capable of producing desirable bioactive phytochemicals for health and wellness.

Experimental Approach
Analyze metabolomics, proteomics and whole transcriptome expressed sequences; profiles of target organ/tissues of available germplasms from current research program.

Sequencing of the NA ginseng genome.

Bioinformatics: data mining and integration to identify and select pathogen resistant genotypes that express bioactives needed for desirable medicinal effects.

Study #2: Medicinal Effects
Use genomics and other 'omics' platform technologies in animal models for:

Application of American ginseng in TCM formulae and herbal interactions

Diabetes (Type II)
Genomics
Cystic Fibrosis

Metabolic Syndrome

Neurofunction

Cardiovascular Protection
Immunomodulation

Systems Chemistry

Bacterial microflora and probiotics

To study the mode of action of ginseng by following critical and significant changes in target tissues in whole living organism.

OGIRC: Contact Information

Addressing concerns and meeting challenges:
Creation of the multi-disciplinary and multi-sector
ONTARIO GINSENG INNOVATION & RESEARCH CONSORTIUM (OGIRC)
Scientific Director: Dr. Ed Lui

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Funded by:
Ontario Ministry of Research and Innovation
Ontario Research Fund - Research Excellence Program

In support of "New Technologies for Ginseng Agriculture and Product Development"