

Ontario Ginseng Innovation & Research Consortium

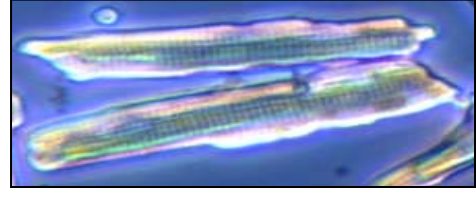
Opportunity for Joint Venture and Contract Research

III. Pre-Clinical Studies

Team lead: Ed Lui (ed.lui@schulich.uwo.ca)

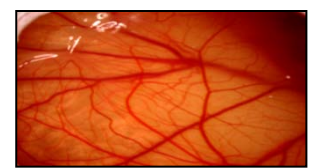
Cardiovascular

M. Karmazyn: Heart failure

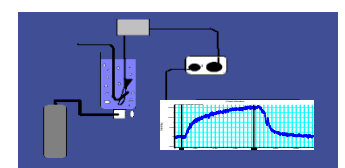


Cultured rat ventricular myocytes

E. Lui: Vascular protective effects



Chorion allantoic membrane assay



Contractile-relaxation response cultured aortic ring

K. Rogers: Atherosclerosis imaging techniques

Q. Feng: Myocardial infarction

J. Ciriello: Experimental hypertension



Normal Breathing

Obstructive Sleep Apnea

Reproductive Health

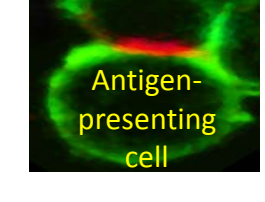
L. Coolen: Erectile dysfunction

V. Feyles: Fetal health



Immunology, Infection & Inflammation

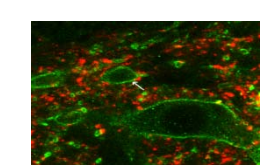
J. Madrenas: T cell response



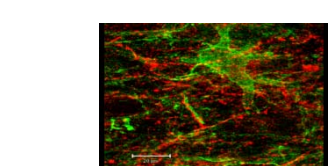
Z. Suntres: Anti-infective effects

E. Lui: Macrophage and anti-inflammatory agents

J. Henry: Rheumatoid arthritis

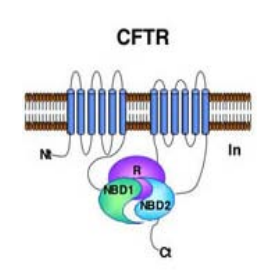


Normal neurone



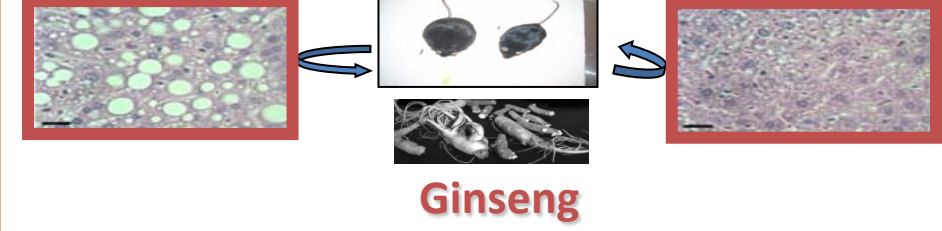
Arthritic neurone

C. Bear & D. Li: Cystic Fibrosis



Metabolic Disorders and Stress

M. Bakovic: Obesity, lipid reduction



Ginseng

E. Noble: Stress and endurance

S. Chakrabarti & J. Trevithick: Diabetic complications; antioxidants

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.

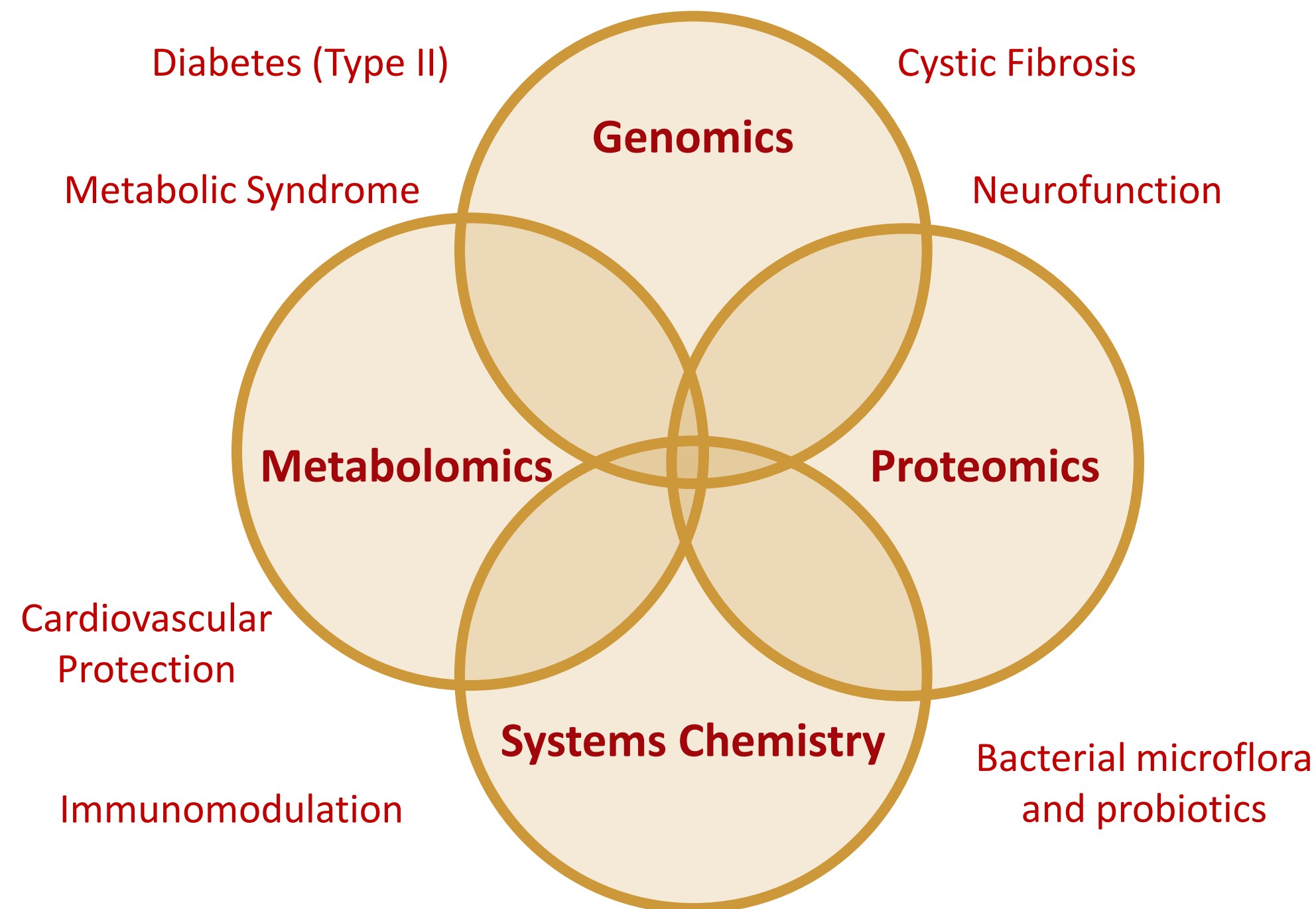
Sequencing of the NA ginseng genome.

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



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

Hierarchy of Evidence



Resources and Partners Natural Health Products

NHPs Industrial Sector
Naturex
Jamieson Labs Ltd.

Government
Agriculture Agri-Food
Canada

The University of Western Ontario

Schulich School of Medicine
& Dentistry
Physiology and
Pharmacology
Anatomy & Cell Biology
Pathology
Faculty of Health Sciences
Faculty of Science
Biology
Faculty of Engineering
Chemical & Biochemical
Engineering
Ivey School of Business
Kings University College

Ontario Universities
Ottawa
Guelph
Toronto
McMaster
Northern Ontario
School of Medicine



Agricultural Sector
Ontario Ginseng
Growers Association
A&L Canada
Laboratories Inc.

Partners



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

Administrative Office

The University of Western Ontario
Department of Physiology and Pharmacology
Dental Sciences Building, Room 2001
www.uwo.ca/ogirc 519-850-2996 ogirc@uwo.ca

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