Ontario Based Comprehensive & Interdisciplinary Initiative for Natural Health Products (NHP)

We are:
- A multi-disciplinary, multi-centered research project
- Developing cutting-edge scientific methodologies for ginseng product quality and pharmacological evaluation
- Training highly-qualified personnel
  - Post-doctoral Fellows
  - Graduate Students
  - Technicians
- Advancing Ontario’s bio-economy

Funded Through Matching Contributions

- 33.3% Government
- 33.3% University
- 33.3% Agriculture/Industry

“New Technologies for Ginseng Agriculture and Product Development”

Total Budget of $20 million (5 years)

Use of NHPs in North America

- NHPs in Canada is a $4 B industry
- 15% of Canadians use NHPs daily

Use of NHPs in NA

Use of NHPs is levelling off and/or declining because:
- Lack of scientific evidence to support health claims
- Lack of product quality and consistence

Cyclic Nature of NHP R&D

- Ontario-grown ginseng is a good case study for the development of other medicinal herbs and NHPs
  - A top selling herb
  - Represents > 60% of the global supply of cultivated NA ginseng
  - Annual export of $50 – 70 million

Ontario Ginseng Innovation and Research Centre Partners and Resources: Value-chain Model

Ontario Ginseng Innovation & Research Consortium

Expertise and Technology for Four Areas (I - IV) of R&D in Natural Health Products:

I. Agriculture & Plant Biotechnology
   Improving Ontario Medicinal Plant Agriculture
   Team Lead: Dan Brown (brownndc@agr.gc.ca)

   - Resourcing of medicinal plants
   - Genetic characterization
   - Cultivar development
   - Micropropagation
     - protocol for NA ginseng

   A&L Canada Laboratories:
   - Agricultural analysis for contaminants, nutrients, soil quality & fertility
   - GPS based nutrient management systems

Ontario Ginseng Growers Association:
   - Good Agricultural Practices
   - Field Studies

II. Advanced Processing
   New Products, Delivery Methods and Dosage Forms
   Team lead: Jesse Zhu (jzhu@uwo.ca)

   Pathway of Advanced Processing I: Powder Technology Research
   - Extract ginsenosides are thermally instable
   - Extract ginsenoside composition is sensitive to extraction technique used
   - Ground and Dried Ginseng Roots

   Fine Ginseng Powder Made with Jet Mill
   - Jet mill: high pressure air grinding machine
   - Ginseng coarse powder is fed into the grinding chamber of jet mill
   - Particles collide with each other under high speed and fragment
   - Method avoids overheating and loss of therapeutic components

   Pathway of Advanced Processing II
   - New Dosage Forms and Delivery Systems

   Opportunity for Joint Venture and Contract Research

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OPGIRC