



# Natural Health Products & Functional Foods Workshop

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# Outline



- **Introduction to Ceapro**
- **Ceapro's role in NHP & FF Industry**
- **Ceapro's Needs & Gaps in Alberta**
- **Overcoming Technical Gaps**

# The Corporation



- **Profitable Canadian Biotechnology Company**
  - Incorporated in 1997
  - Listed on TSX-V (CZO) [O/S 61 million]
- **Headquarters & Research Labs: Edmonton, Alberta**
- **Manufacturing Facility: Leduc, Alberta**
- **2014 BIOTECCanada Gold Leaf Award**



# Ceapro's role in NHP & FF Industry

- **Manufacture standardized active plant extracts**
  - Procure feedstock
  - Generate industrial quantities of extracts
  - Fulfill distributor & end customers needs



# Ceapro's role in NHP & FF Industry

- **Solution provider to formulators**
  - Conduct process & quality Improvement
  - Develop new technologies



Golden Oat Technology (GOT)



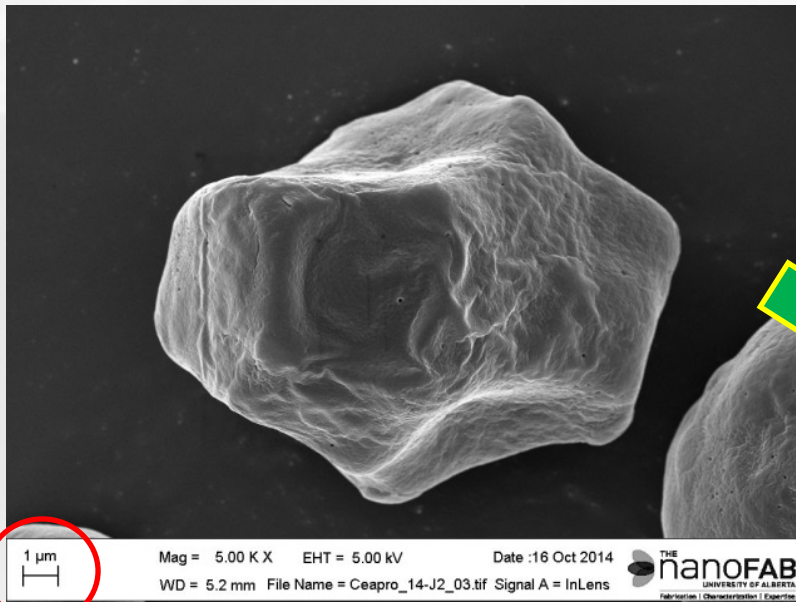
PGX Technology

# New PGX Technology

- **Pressurized Gas eXpanded Liquids (PGX) can:**
  - Dry polymers (starch, beta-glucan, pectin etc..) at 40°C
  - Extract, purify & deodorize polymers
  - Micronize: create highly porous particles
  - Impregnate polymers with heat sensitive bioactives

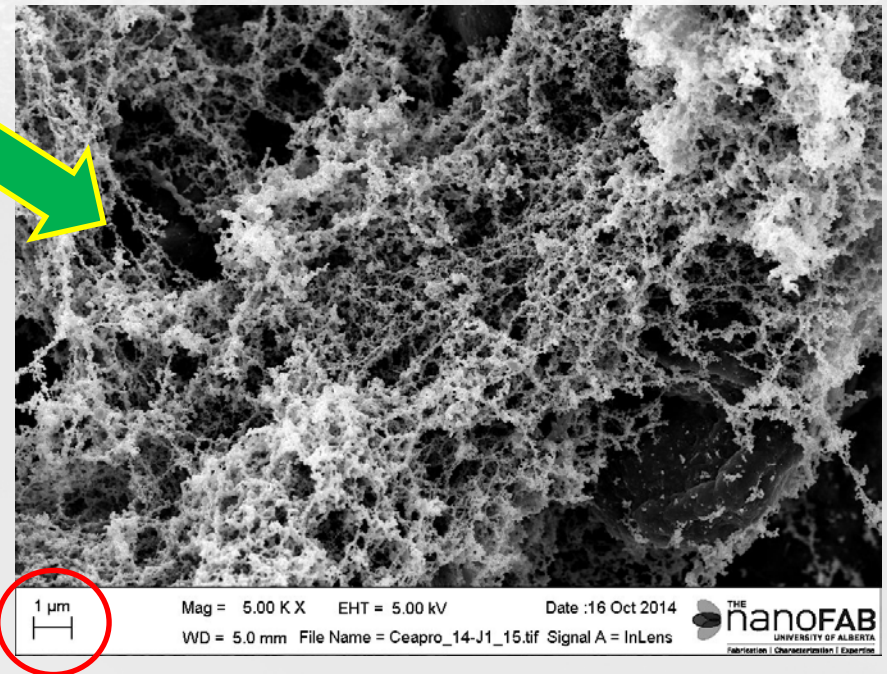


# PGX Processed Corn Starch



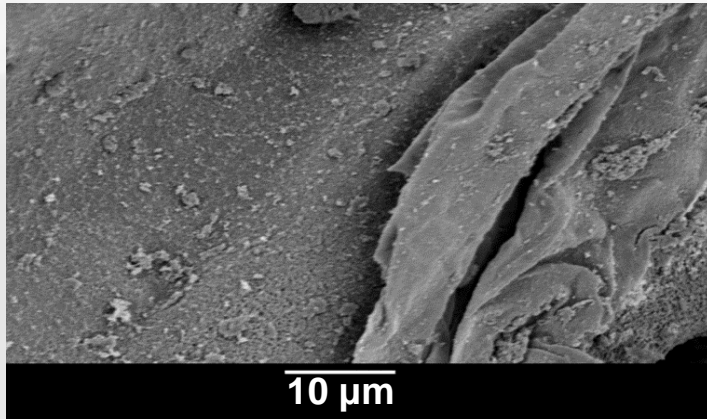
Before PGX Processing

- **Size reduction: 300 x smaller**
- **Specific Surface Area  $>150 \text{ m}^2/\text{g}$**

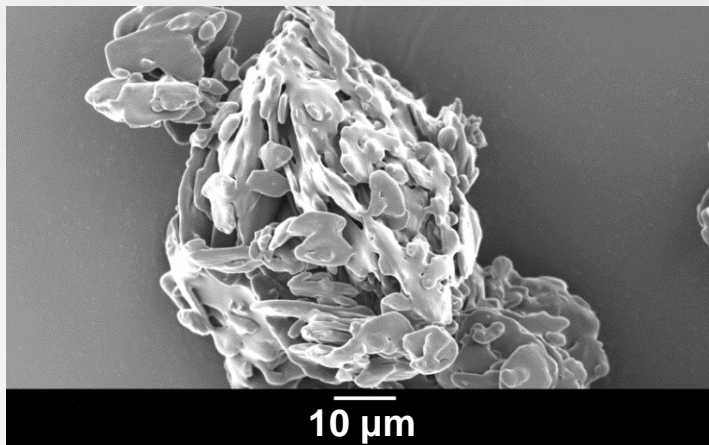


After PGX Processing

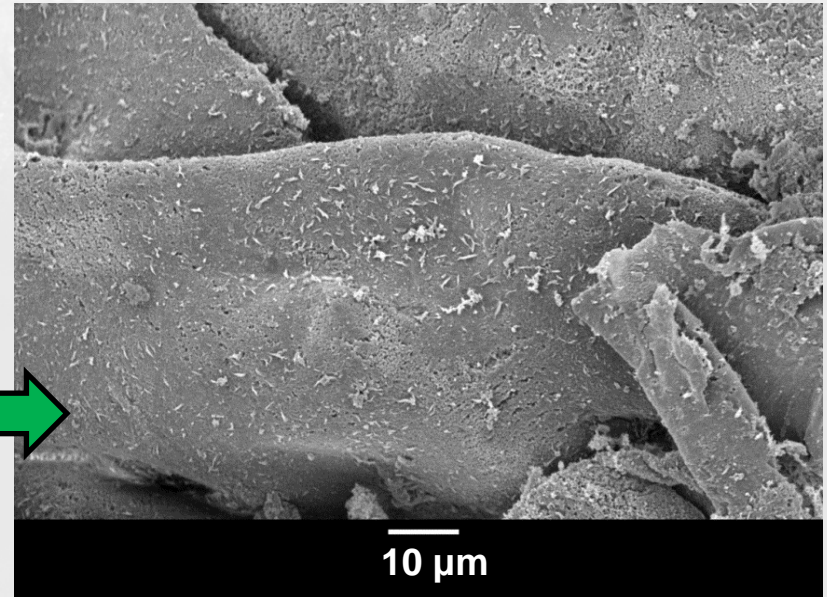
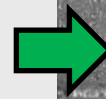
# Beta Glucan Impregnation Using PGX



Pure BG



Pure CoQ<sub>10</sub>



Impregnated BG

- **CoQ<sub>10</sub> is not visible: CoQ<sub>10</sub> is deposited at submicron scale**



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  - Use of Ethanol (Class I, Div. 2 electric)
  - Assessment of various material (Cosmetic, Food, Industrial)
  - Large enough to house PGX skid and ethanol recycling skid
  - Flexible hours of operation



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- **Market Intelligence**
  - Understand what the end customer wants and at what price
  - Reliable forecast

# Overcoming Technical Gaps in Alberta

- **Support current scale-up processing facilities in Alberta:**
  - Leverage resources: become a center of excellence
  - Ensure equipment is up to date and operational
  - Train technical staff
  - Shorten turn around times
- **Train highly skilled workers:**
  - Continue to promote applied undergrad programs
  - Encourage entrepreneurship
- **Targeted funding**
  - Continue to support fundamental and applied research
  - Provide additional funding to “cross the pre-chasm”



**Thank you for the role you play!**

