

Development of a Novel Oral Care Product Line

SmileSonica Inc. is an Edmonton-based medical device company focused on non-invasive oral health technologies. After bringing to market the Aevo System™, a therapeutic ultrasound medical device for orthodontic applications, SmileSonica's innovation team is now focusing on the development of superior over-the-counter (OTC) artificial saliva products for dry mouth (xerostomia) patients.

The objective is to develop a new oral care product line based on the unique properties of CNC-material. The new line of gel, mouthwash, and spray products will provide a non-synthetic (plant origin) alternative to current synthetic products while providing long lasting relief from mouth dryness.

**RECIPIENT:**

**SmileSonica Inc. –
Cristian Scurtescu**

**TOTAL BUDGET:**

\$570,520

**AI FUNDING:**

\$300,000

**PROJECT DATES:**

**June 2018 -
November 2020**

**PROJECT TRL:**

**Start: 4
End: 7**

APPLICATION

Xerostomia patients have trouble speaking, chewing and swallowing food. Because of lower saliva protection, they also develop sore mouth, bad breath, dental caries, and periodontitis. Medication, autoimmune and systemic diseases, and radiation therapy for head and neck cancers are the most frequent causes of xerostomia. Patients will use the CNC-based saliva products several time per day to alleviate their dry mouth symptoms and will benefit from the high muco-adhesion and increased long-term safety nature of CNC.

ALBERTA INNOVATES CLEAN RESOURCES

BIOINDUSTRIAL INNOVATION

BIOMATERIALS PURSUIT

PROJECT GOALS

- Product Development
 - Complete Formulation Development
 - Secure Contract Manufacturer
 - Select product packaging
 - Develop product processing procedures
 - Manufacture prototype batch production
- Testing and Validation
 - Evaluate product shelf-life aging
 - Perform biocompatibility testing applicable for oral applications
 - Validate packaging processes and materials
- Clinical Evaluation
 - Validate the clinical benefits of the CNC-based artificial saliva
 - Obtain patient and clinician feedback
 - Collect clinical data for product regulatory clearance and publications

BENEFITS TO ALBERTA

- Industry diversification: oral care product R&D and business know-how will be advanced.
- High-value new products from cellulose: utilizing CNC material in high-margin medical products.
- Diversification of forest resources: the new product line will benefit the local suppliers of CNC.
- Infrastructure development: R&D and commercial activities will lead to additional infrastructure being developed.
- Job creation: significant job creation will be required to bring the new products to the global market.
- Increased tax revenue: the resulting sales revenue and increased team will result in increased tax being paid.
- Increased sales revenue: once commercially available, the new products will provide a new revenue stream for SmileSonica.
- Knowledge creation: the team will gain further experience in the medical products industry.



3 New Products



2 Project Jobs



9 Future Jobs



2 Patents



1 Publication

CURRENT STATUS

APRIL 2020

SmileSonica completed the formulation development, evaluated and audited contract manufacturers, selected packaging materials, developed the product processing parameters, and a quote is in process at the selected contract manufacturer. In addition, the shelf life testing for the lead formulation and alternate formulations is ongoing as part of a 36-month study, and various biocompatibility testing are being performed on the lead formulation. Next, the team will initiate the clinical evaluation activities once the prototype batch is produced and the biocompatibility testing is successfully completed.