



INNOVEXCHANGE LABORATORIES
Nikos Linardakis, M.D., Director
2223 S. Highland Drive, E6-288
Salt Lake City, UT 84106

T 715.213.8855
NikoLinardakis@Yahoo.com

April 27, 2017

Nekoosa Marsh
c/o Nicholas Karris
312-521-9342

Re: Proanthocyanidins and Laboratory Analytical Results

Dear Mr. Nick Karris:

With regards to the cranberries submitted, we analyzed the organic biodynamic cranberries vs. the conventional store cranberries in two laboratory formats. The first is a **quantitative** measurement of the most important health ingredient in the cranberries, Proanthocyanidins (PACs), which are responsible for the bacterial anti-adhesion properties and other antioxidant benefits. The second is a bioactivity test, measuring the bacterial anti-adhesion *activity*, this test is a measurable **qualitative bioactivity test** of the actual bioactive influence the PACs have against cell adhesion of bacteria, the cause of health issues such as urinary tract infections. The laboratory analysis was done in collaboration with world-recognized Rutgers University/Amy Howell and Complete Phytochemical Solutions, both known for their work on PACs.

As you are aware, evidence of the *Vaccinium macrocarpon*, the American cranberry, has shown that health benefits originate from these particular phytochemicals, known as proanthocyanidins.

The **organic biodynamic cranberry** sample presented a **higher PAC content** (89.5 mg/g for organic biodynamic vs. 73.4 mg/g for conventional cranberries) **and by over double the activity** (0.67 g/mL for organic biodynamic vs. 1.58 g/mL for conventional cranberries; please remember, the lower the activity test measurement represents higher activity). This is a significant difference, and an added value to the end consumer, providing health benefits from the **organic biodynamic cranberries**, measured by the higher **quantity and activity of PACs**.

Attached please find the Certificate of Analysis for both lab results.

With appreciation,

Dr. Linardakis