

Electro-Ox™ Antioxidant Test



NanoGreens¹⁰

More Powerful In The Can, More Bioavailable In You

Antioxidant capacity testing evaluates the potency of phyto-nutrients which, in most formulations, are known to be poorly absorbable. Therefore, the potency in the canister and the potency in the body need two different measures. It's important to ask, "how much of the antioxidant power of a formula is absorbable, or bioavailable?" The answer can be found by testing the antioxidant power of the phyto-nutrients in the canister (invitro), and by analyzing them in the body (invivo).

In order to maximize the bioavailability of the phyto-nutrients in NanoGreens¹⁰ BioPharma's team of scientists has incorporated a patented liposomal nanotechnology we call NanoSorb™. To back our claim that NanoGreens¹⁰ is both more powerful in the canister and more bioavailable in you, we have performed, respectively, an invitro and invivo antioxidant analysis using the Electro-Ox method.

How Does the Electro-Ox™ Antioxidant Test Work?

The Electro-Ox test measures antioxidant activity in nutritional supplements, saliva, and blood plasma. Electro-Ox uses the principles of electro-chemistry to measure the conductivity of a test solution. Conductivity is related to the density of free radicals in the tested medium.

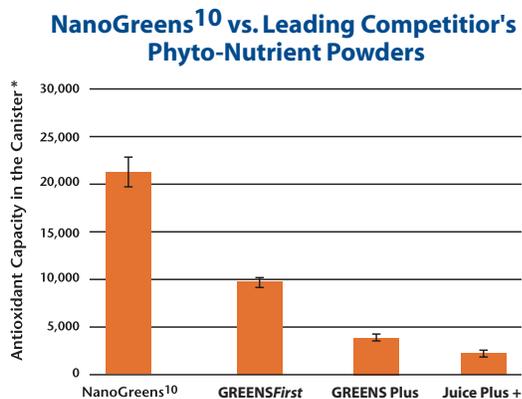
Common free radicals in biological systems include superoxide, hydrogen peroxide, and peroxy ions. Superoxide radical scavenging is a particularly good marker for the overall antioxidant activity of a multi-ingredient, plant-based extract sample, due to the fact that many oxidants reduce this free-radical in the human body.

The total antioxidant activity measured in supplements and foods come from a multitude of sources such as phenols (anthocyanins, catechins, isoflavones), terpenes (carotenoids, vitamin E complex), organic acids (ellagic acid), peptides (glutathione), minerals (selenium), water soluble vitamins (vitamin C), and enzymes such as superoxide dismutase.

Both hydrophilic and lipophilic antioxidants are measured with accuracy. Results are reported in equivalence to a standard antioxidant compound such as superoxide dismutase enzyme (SOD), ascorbic acid, vitamin E oil, and Trolox (water soluble form of vitamin E).

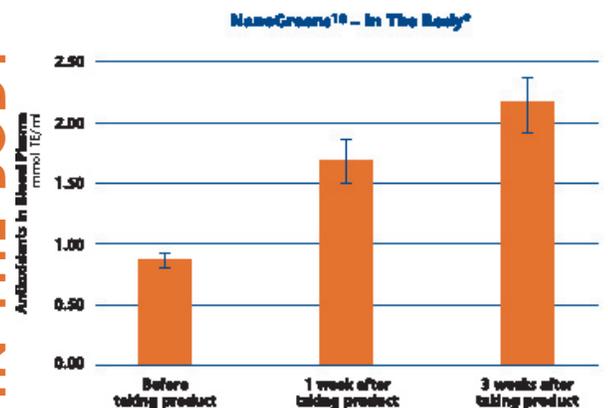
Unlike all other antioxidant testing methods, Electro-Ox has the advantage of directly measuring the primary reaction without interfering with any reaction, by the addition of reagents in order to measure a color change or florescence. By directly measuring the primary reaction without interfering, the Electro-Ox instantly gives highly repeatable and accurate results.

IN THE CAN



Invitro antioxidant activity of one serving of NanoGreens¹⁰ as compared to one serving of a top selling fruit and vegetable phyto-nutrient powder from each distribution category. **

IN THE BODY



*In VIVO blood plasma results after supplementation of 1 g/day of NanoGreens¹⁰ (ingredient: PhytoActiv™ (utilizing NanoSorb™))

Mean antioxidant activity for day 1, 7 and 21 in mmol TE/ml* deproteinized plasma for all subjects (not including the control subject) after supplementation. Mean antioxidant activity increased over 100% over the course of the three week study.**

*Trolox Equivalent Antioxidant Capacity or TEAC. This Electro-Ox test measures antioxidant power against super oxide radical in Trolox equivalents per milliliter. Trolox uses water soluble vitamin E as a standard.

**Testing performed by Kerry Ringer, PhD Plant Biochemistry and Mark Saverese, Chemical Engineer of Columbia Phytotechnology February, 2005