

Pharmanex® BioPhotonic Scanner S3

LIGHT. INNOVATED.

POSITIONING STATEMENT

The patented Pharmanex BioPhotonic Scanner is a cutting edge testing tool that non-invasively measures carotenoid levels in living tissue, providing an immediate indication of a person's antioxidant levels.

CONCEPT

The Pharmanex BioPhotonic Scanner is extraordinary science—personalized, revolutionized, and simplified. By placing your hand in front of the scanner's blue light, you receive a score that will empower you to make improvements to your antioxidant levels through nutrition and supplementation with products such as LifePak and g3*. Clinically proven in multiple studies, we believe this revolutionary technology is the gold standard for carotenoid antioxidant indication in human tissue.

Personalized

The BioPhotonic Scanner brings cutting-edge nutritional science out of the laboratory and into your home. Every friend and family member can instantly know their own antioxidant status, making it easier for them to make the best supplementation decision for their body. Their motivation grows as they watch their scores rise while taking their Pharmanex supplements and making important diet and lifestyle changes. Customers may develop a personal nutrition regimen fitted to their needs, and you can attract individuals who clearly see the business implications of this powerful tool.

Revolutionized

In 2002, the hardware needed to provide an accurate scan occupied a 10x10 room. Creating a tabletop model was an engineering feat, resulting in the patented, proprietary technology in the original S1 scanner. The advancements released with the S2 made the scanner 50% lighter, 60% smaller, and less temperature sensitive with a faster warm-up time.



Simplified

Our latest advancements to the Pharmanex BioPhotonic Scanner technology bring simplification and versatility to the cutting-edge nutritional science. The S3 Scanner is faster, smaller, truly portable, and wirelessly controlled with an Apple device. Our newest BioPhotonic Scanner weighs only 3.2 pounds, is battery operated, and is Bluetooth connected to enable you to scan anywhere, anytime.

PRIMARY BENEFITS

- Provides a quick and convenient way to obtain an indication of your antioxidant status
- Lets you track your Skin Carotenoid Score (SCS) over time as you make important diet and lifestyle changes
- Helps you verify improvements in status from taking Pharmanex SCS certified products
- Portable: weighs only 3.2 pounds and is wirelessly controlled via the included iPad Mini
- Battery Operated (~500 scans or 6 hours of constant use on a single charge)
- Fast scanning (30 seconds)
- Purchase "Digital Scan Cards" directly from the app if you'd like. Existing physical scan cards are still supported, in which case the iPad's camera is used to scan the barcode
- A business opportunity like no other in the world

WHAT MAKES THIS PRODUCT UNIQUE?

- World's first non-invasive method of measuring antioxidant activity (skin carotenoids)
- Patented technology exclusive to Pharmanex
- More versatile (smaller, faster, easier to use, wireless, etc.) so you can scan virtually anywhere

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WHO SHOULD USE THIS PRODUCT?

Anyone who is mindful of his or her current and future antioxidant status should take the opportunity to be scanned.

DID YOU KNOW?

- According to the National Academy of Science, carotenoids are the best biological markers for consumption of fruits and vegetables.
- Two clinical studies show that carotenoid levels correlate to levels of many other non-carotenoid antioxidants.
- Your Skin Carotenoid Score can be influenced by diet, a supplemental regimen, and lifestyle.

FREQUENTLY ASKED QUESTIONS

How can I obtain an S3?

The S3 device will be available to the US market when it is released in July of 2013. The S3 will roll out to other markets over time as translations and other preparations are completed. Contact your market office for release dates, information on how to upgrade your scanner, or to join the Pharmanex BioPhotonic Scanner community by leasing a scanner today.

I already have an S2 scanner. How do I upgrade to the S3?

Current leasing distributors will be upgraded based on productivity rates and new lease demand will be fulfilled by shipping the new S3 Scanner as inventory is made available to the markets. Leasing will continue without change regarding the financial obligations. (See full Policy Statement for more details).

What does the S3 include?

- S3 BioPhotonic Scanner device
- iPad Mini
- Carrying case
- Charging kit & power cords.

What does the Pharmanex BioPhotonic Scanner measure?

The Pharmanex BioPhotonic Scanner is the world's first measuring tool that gives you a Skin Carotenoid Score (SCS)—immediate evidence of carotenoid antioxidant activity in your body. By placing the palm of your hand in front of the scanner's safe, low-energy blue light, within seconds you will obtain a reading of the carotenoid antioxidant levels in your skin—your Skin Carotenoid Scores (SCS)—which has been scientifically correlated to your

total antioxidant status. The Scanner measures carotenoid levels in human tissue at the skin surface using optical signals. These signals identify the unique molecular structure of carotenoids, allowing their measurement without interference by other molecular substances and providing the person being measured with their own SCS.

In less than one minute you can find out if your diet, lifestyle and supplements provide the antioxidant protection you need for improved health.

How does the Pharmanex BioPhotonic Scanner work?

The BioPhotonic Scanner functions on the principle of reflected and scattered light discovered by C.V. Raman in 1930, and adapted for the assessment of carotenoids in living tissues by Gellermann et al. in 2000. Resonance Raman Spectroscopy is based on the fact that each species of molecule in the body can reflect a different set of colors when stimulated with a light source of a known frequency. The scanner technology works on the principle of light and the fundamental particle of light is a photon. White light has photons of different wavelengths, which are represented by colors. The scanner produces a narrow beam of light in which all of the photons are the same color—blue. The blue light has a wavelength of 478 nanometers (nm).

When a 478 nm photon of light comes into contact with a carotenoid, something interesting happens. The energy level of the 478 nm photon shifts to 518 nm, the wavelength associated with green light. The only molecule in nature that can shift a 478 nm photon to a 518 nm photon is a carotenoid.

As 478 nm photons strike carotenoids in the skin, they are reflected back as 518 nm photons. This is how the carotenoid concentration in the skin is measured. Because the number of photons reflected at the 518 nm wavelength is proportional to the concentrations of carotenoids in the skin, these green photons are then counted to calculate the individual's Skin Carotenoid Score.

What does my Skin Carotenoid Score mean?

Your Skin Carotenoid Score is an immediate numeric reading of your own skin carotenoid content and an important indicator of your body's antioxidant defense system. As you continue to participate in the LifePak supplementation program, you can track your Skin Carotenoid Score, which can increase after only four weeks of LifePak supplementation

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and may continue to increase after eight to twelve weeks. Knowing your SCS empowers you with a personalized assessment that can be used to develop an antioxidant defense strategy. Your SCS is reflective of long-term lifestyle habits, and is not subject to changes during short periods of hours or days. Scanning every 6–8 weeks is ideal to help you determine whether you are consuming an adequate amount of antioxidant-containing nutrients.*

Is the Pharmanex BioPhotonic Scanner backed by science?

The use of Raman Spectroscopy for biological measurements is an established scientific discipline backed by years of research. The Pharmanex BioPhotonic Scanner S1, S2, and now the S3, are patented applications of Resonance Raman Spectroscopy for the measurement of carotenoid antioxidant nutrients in living tissue for the improvement of nutrition. The use of biophotonics to assess biological molecules in living tissue is a distinct scientific discipline, and the Pharmanex BioPhotonic Scanner is an instrument that is based on the same principles. The use of Raman Spectroscopy for the assessment of human tissue carotenoids has been validated by at least eight peer-reviewed studies conducted by third party entities unrelated to Pharmanex or the supplementation industry. (Bernstein, 1998, 2002; Ermakov, 2004a, 2004b; Gellermann, 2004, 2002; Hata, 2000; Zhao, 2003.)

In addition to the external research, Pharmanex has validated the use of Raman Spectroscopy for the measurement of carotenoids in several studies including a large-scale clinical screening study with 1,375 subjects that confirmed a correlation between antioxidant status and lifestyle parameters (Smidt, 2003). A second study established the efficacy of LifePak to improve the antioxidant status of subjects over a 12-week period (Smidt, 2002). A third study established a highly significant correlation ($r=0.78$) between blood carotenoid levels and skin carotenoid levels as assessed by the Pharmanex BioPhotonic Scanner (Smidt, 2004a). A fourth study, which was presented at the 45th annual meeting of the American College of Nutrition in Long Beach, California (Zidichouski, 2004), demonstrated that the Pharmanex BioPhotonic Scanner measurement has less variability than blood carotenoids (measured by the conventional HPLC method). A fifth study was presented by Dr. James Rippe at the National Meeting of the American College of Sports Medicine in June, 2004 (Indianapolis, IN). This study confirmed that in overweight and obese individuals, the level

of adipose tissue accumulation negatively influenced skin carotenoid levels, and thus antioxidant status.

A sixth study established skin carotenoid levels as an indicator of overall antioxidant status. The researchers investigated correlations between skin carotenoid levels (Pharmanex BioPhotonic Scanner) and blood serum antioxidants (vitamins C and E, and carotenoids by HPLC) as well as urinary isoprostanes, which are widely regarded as the best measure of oxidative stress in the body. Together, these results confirmed that the Pharmanex BioPhotonic Scanner is a very good non-invasive indicator of overall antioxidant status in the body and of overall oxidative stress.

How do skin carotenoids correlate to overall antioxidant status?

A study conducted by Svilaas et al. established carotenoids as a reliable indicator of other dietary antioxidants. Svilaas and his colleagues assessed antioxidant intake from diets of more than 2,670 adults and evaluated blood serum antioxidants of 61 individuals for seven consecutive days. Svilaas et al. reported that carotenoids are a better predictor of serum antioxidant concentrations than alpha, beta, delta, and gamma-tocopherols or glutathione (Svilaas, 2004). In agreement with Svilaas' findings, Pharmanex research shows a highly significant inverse correlation between skin carotenoids and oxidative stress (urinary isoprostanes as a measure of actual free radical damage).

Two studies conducted by Pharmanex showed a highly significant correlation between serum total carotenoids and skin carotenoids as assessed by Raman Spectroscopy. The first of these two studies ($n=104$) showed a correlation of $r=0.78$ ($p < 0.001$), and the second ($n=372$) produced three separate correlation plots (range 0.78 – 0.82, $p < 0.0001$), all highly significant (Smidt 2004; Zidichouski 2004). This data bridges the findings of Svilaas to validate Raman Spectroscopy as a method to assess skin carotenoid status and provide an indication of broad spectrum antioxidant status, without the inconvenience of skin and blood samples.

KEY SCIENTIFIC STUDIES

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