

—Skin Health Program—

*Optimizing skin function and appearance**



Designed to provide:

- *Antioxidant Protection**
- *Immune Defense**
- *Collagen Reinforcement**
- *Moisture Retention/Skin Hydration**
- *Nourishment and Oxygenation**
- *Detoxification**



*This is a statement of nutritional support. This statement has not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

Section 1. Skin Health Overview

Introduction

The skin is the body's largest, most vulnerable organ. At a glance, the condition of one's skin can suggest a general state of health and provide clues about one's lifestyle, age and experiences. It is also highly functional, no less dynamic than the heart, kidneys or liver. Its physiological roles include: elimination of fat-soluble toxins, immune system defense, vitamin D₃ synthesis, nutrient storage, moisture retention, body temperature regulation and self repair.

The ability of skin to fulfill these varied tasks is affected by a number of factors. It is continually exposed to chemical-laden soaps and creams, weakened by stress and aging, compromised by poor dietary habits, and weathered by external elements, including pollution and intense rays from the sun. Aside from their effect on skin function, these influences also have an impact on appearance.

Now more than ever, the many punishments endured by our skin over the course of a lifetime are being recognized. Fortunately, there is extensive scientific evidence to indicate that natural extracts and nutrients contain biologically active molecules (catechins, flavonoids, polysaccharides, carotenoids, and other phytochemicals and antioxidants) that can support and protect skin physiology at its very foundation.

A Closer Look

Skin is a complex tissue composed of three distinct layers, the epidermis, dermis, and subcutaneous fat. The epidermis and dermis contain specialized cells, known as keratinocytes and fibroblasts, respectively. These cells synthesize a highly intricate and organized network of collagen and elastin fibers in addition to other macromolecules called glycosaminoglycans. This arrangement is collectively known as the extracellular matrix (ECM) and it provides elasticity and firmness to the skin. In addition, skin also contains particular immune defense cells, or Langerhans cells, that attack foreign particles after they have penetrated the keratinized barrier. It also has an inherent antioxidant network that helps neutralize deleterious reactive oxygen species (ROS).

Skin's unique composition can be altered by various means. Free radicals generated by normal metabolic processes create cumulative damage. At the same time, the aging process results in a reduced capacity to generate endogenous antioxidant defense. Furthermore, sun exposure triggers numerous biochemical pathways in the epidermis and dermis, especially the generation of ROS. This initiates lipid peroxidation, changes ECM configuration, creates reactions that redden and irritate the skin, weakens activity of Langerhans cells, and depletes cutaneous antioxidants. Sun exposure also activates degradation enzymes, including matrix metalloproteinases (MMPs), dismantling collagen and elastin fibers. Additionally, chemicals from our environment and the physiological responses caused by everyday stress overburden the body's natural antioxidant and detoxification systems.

These events are all relevant to the state of skin's health and its ability to efficiently perform its many functions. Visibly, their combined actions deteriorate and dull the skin and contribute to the hallmark signs of aging, which include fine lines, wrinkles and age spots. In order to counter some of these effects, an optimal scope for preserving healthy skin would involve support for the following:

- neutralization of ROS
- epidermal immune defense
- collagen reinforcement
- moisture retention/hydration
- nourishment and oxygenation
- detoxification

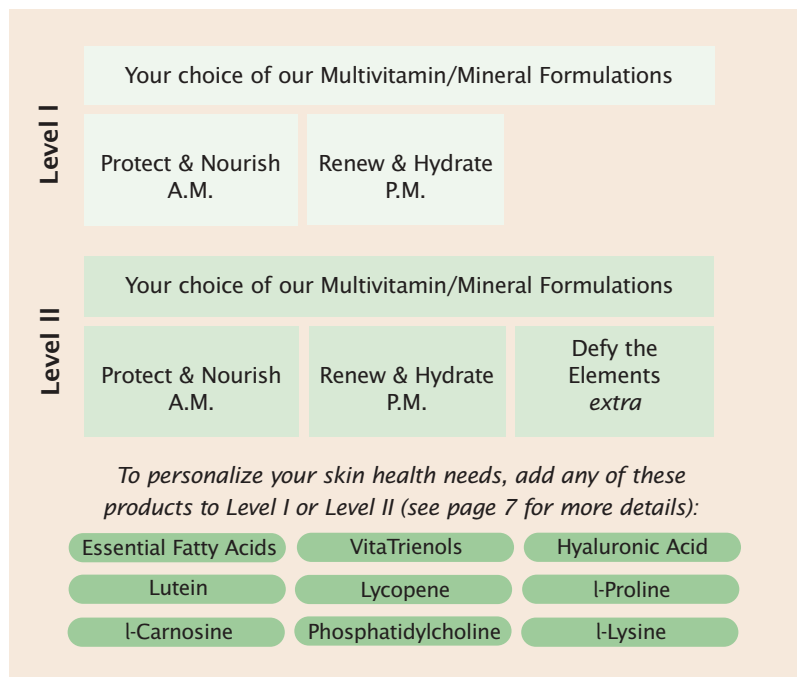
A vigorous new skin support trio from Pure Encapsulations, designed to be part of a comprehensive program, targets these deep-rooted aspects of skin function and appearance with some of the most high-powered and innovative ingredients available.*

Section 2. An Introduction to the Skin Health Program

This program centers around two suggested approaches. Each incorporates your choice of our multivitamin/mineral formulations, the foundation for healthy hair, skin and nails. Each also allows you to customize your program with additional skin health products.*

Level I. Attain targeted skin protection with two specialized products, Protect & Nourish A.M. and Renew & Hydrate P.M.*

Level II. Advance the Level I recommendations with a third specialty product, Defy the Elements *extra*, for an additional boost of protection.*



2 *This is a statement of nutritional support. This statement has not been evaluated by the Food & Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

Section 3. Product Details and Features

Multivitamin/Mineral Supplements

At the very foundation of strong hair, skin and nails are the metabolic processes supported by B complex vitamins, particularly biotin. Equally important is well-rounded antioxidant defense from vitamins A, C and E along with mixed carotenoids, including lutein. These versatile antioxidants contribute to sun protection and/or combine with mineral chelate cofactors to help support collagen integrity. Nutrient 950®, UltraNutrient®, Polyphenol Nutrients, and Multi t/d are examples of high quality formulations serving as the pillar of an optimal skin health program.*

Protect & Nourish A.M.

What it contains: Powerful antioxidant/photoprotective ingredients combined with exceptional nutritive factors.*

What it does: Defends the skin from free radical damage and photoaging in addition to providing vital nourishment factors, maximizing skin function while helping to minimize the appearance of fine lines and wrinkles.*

Antioxidant/Photoaging Defense:

Alpha lipoic acid is a dual-protection fat and water soluble antioxidant, protecting skin by terminating free radicals and chelating transition metal ions. It has also been shown to regenerate other skin-shielding compounds, such as vitamin E and CoQ₁₀, and to boost cytosolic glutathione and vitamin C levels. Furthermore, alpha lipoic acid maintains a healthy cellular response in keratinocytes and protects collagen by maintaining healthy advanced glycation end product activity.*

Vitamin C acts as an integral collagen synthesis cofactor, promoting skin elasticity and resiliency. As an antioxidant and immune defense stimulator, it helps counter the effects of oxidative stress.*

Alongside the well-known antioxidant activity of ellagic acid, anthocyanins and tannins found in **pomegranate** retain a healthy immune cascade in skin cells. This extract may also protect cellular lipid membranes while boosting the antioxidant enzyme activities of catalase, superoxide dismutase, glutathione peroxidase and glutathione reductase, enzymes depleted by sun exposure.*

Epigallocatechin gallate (EGCG) and other polyphenols found in **green tea** maintain DNA integrity of sun exposed skin, protecting both fibroblasts and keratinocytes, as suggested in human and cell studies. Other studies have revealed that EGCG may provide a photoprotective effect via moderating transcription factor and MMP activities, preserving the extracellular matrix (ECM). An intact ECM is important for promoting microcirculation of nutrients and oxygen while eliminating toxins and metabolic by-products, sustaining efficient skin function. Green tea may also preserve collagen structure by maintaining healthy glycation activity.*

Pycnogenol® pine bark extract, containing proanthocyanins, is a super-charged antioxidant with immense skin support potential. It selectively binds to proteins rich in hydroxyproline, such as collagen and elastin, defending them from free radicals. In addition, it protects collagen and elastin from enzymatic degradation (Figure 1). These combined actions suggest that pycnogenol may be beneficial for keeping skin firm.*

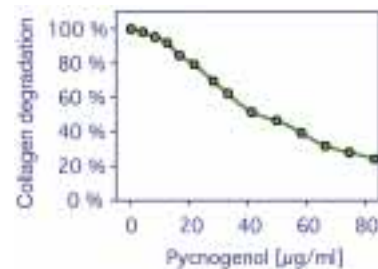


Figure 1: Pycnogenol protects collagen from the enzyme collagenase I. With increasing amounts of pycnogenol, an increasing percentage of collagen is protected.*

By stimulating nitric oxide activity, pycnogenol may help relax blood vessels constricted by stress hormones. The enhanced microcirculation that results may promote a healthier complexion by enhancing oxygen and nutrient delivery. *In vitro* studies have also demonstrated pycnogenol's ability to maintain a healthy immune mediator response at the cellular level, soothing occasionally irritated skin.*

Pycnogenol may also help diminish the appearance of skin pigmentation, or age spots. One study involving 21 volunteers suggested that it helped reduce the free radical burst associated with sunlight and minimized temporary redness (Figure 2). Another study involving 30 women indicated that pycnogenol supplementation resulted in an almost 38% reduction in size and a 22% reduction in pigment intensity of age spots (Figure 3).*

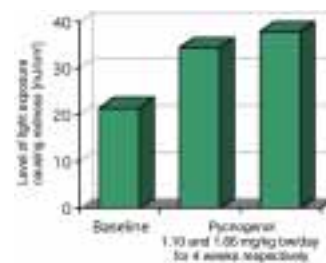


Figure 2: Pycnogenol supplementation increased sun exposure threshold in skin of volunteers, reducing temporary redness.*

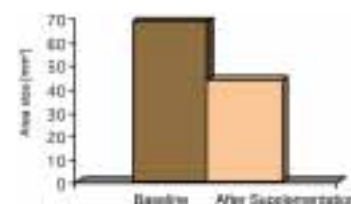


Figure 3: 30 women supplemented daily for 1 month with pycnogenol. Supplementation reduced pigment intensity of age spots by 22% and the area by almost 38%.*

Nutritive Factors:


Freeze-dried coconut water solids provide a reservoir of vitamins, minerals, amino acids, RNA-phosphorus and organic acids that support tissue health and contribute to refreshed and replenished skin. Coconut water is rich in quinic acid and shikimic acid, which act as free radical scavengers and play a key role in the biosynthesis of aromatic amino acids, phenolics, and alkaloids in the coconut. Coconut water also contains cytokinins, plant messenger molecules involved in healthy cell growth and differentiation for additional skin restoration. Its natural enzymes also promote toxin elimination, providing potential support for reviving and clarifying skin.*



Arthrospira platensis, formerly referred to as *Spirulina platensis*, was developed over many years under the tropical sun of Kona, Hawaii. It is believed to be one of the most nutrient dense foods. It is a concentrated source of protein, essential amino acids, vitamins, and naturally chelated minerals. Phycocyanin and chlorophyll, the companion blue and green components of spirulina, both contribute to detoxification and cleansing. In addition, phycocyanin provides antioxidant activity while chlorophyll promotes amino acid assimilation. This strain of Hawaiian spirulina is also particularly rich in mixed carotenoids and provides antioxidant enzymes, including superoxide dismutase (SOD), for enhanced protection and immune function. Microbiologists from the University of Hawaii have even identified enzymes not found in other spirulina strains. Essential fatty acids contained in spirulina include gamma linolenic acid (GLA), supporting skin smoothness. Combined, these factors optimize the performance of skin functions and help promote invigorated and radiant skin.*

Protect & Nourish A.M.

each vegetable capsule contains		
vitamin C (as ascorbyl palmitate)	10	mg.
ascorbic acid.....	100	mg.
alpha lipoic acid (thioctic acid).....	100	mg.
green tea (Camellia sinensis) extract (leaf)	150	mg.
providing:		
total tea catechins 65%.....	98	mg.
epigallocatechin gallate (EGCG) 23%.....	35	mg.
caffeine 7%.....	11	mg.
pine bark extract	30	mg.
(standardized to contain 65-75% proanthocyanins)	20-23	mg.
pomegranate (Punica granatum L.) extract (whole fruit)	100	mg.
(standardized to contain 5% ellagic acid).....	5	mg.
freeze-dried coconut water solids.....	150	mg.
hawaiian spirulina (Arthrospira platensis).....	125	mg.
1 capsule per day, in the morning, with a meal.		
	quantity	order code
Protect & Nourish A.M.	60	PAN6
	30	PAN3

 Pycnogenol is a registered trademark of Horphag Research Ltd. U.S. Patents 4,698,360, 5,720,956 and 6,372,266.

Renew & Hydrate P.M.

What it contains: Essential components for collagen reinforcement and skin hydration combined with restorative antioxidant and immune defense compounds.*

What it does: Bolsters the skin's collagen network, repletes cellular energy, boosts antioxidant protection and provides hydrating properties, supporting skin function and renewal, and minimizing the appearance of wrinkles and fine lines.*

Collagen Support and Skin Cell Renewal:

BioCell Collagen II® is a patented, hydrolyzed and denatured low molecular weight type II collagen that also provides a naturally occurring matrix of hyaluronic acid (HA), glucosamine sulfate, chondroitin sulfate, and amino acids.*

HA is a glycosaminoglycan found in every tissue of the body and is highly concentrated in the skin. It provides structure to the ECM by encouraging collagen formation. Furthermore, HA attracts water, promoting hydration and moisture retention. HA declines with age, which contributes to the development of fine lines and wrinkles.*

Case reports have suggested that BioCell Collagen II may help rejuvenate skin and modulate the appearance of wrinkles and blemishes. In a peak absorption study, serum levels of HA increased gradually and with statistical significance after BioCell Collagen II supplementation. After a 28-day duration of daily supplementation, metabolites of HA in the blood stream remained increased.*

The additional constituents of this compound, including collagen type II, glucosamine sulfate, chondroitin sulfate, lysine, proline and hydroxyproline, all support the tensile strength of collagen. Moreover, proline may also play a role in stimulating healthy epithelial cell formation by promoting keratinocyte growth factor.*

Proanthocyanidin-rich *grape seed extract* helps stabilize collagen and elastin by moderating activities of the proteolytic enzymes collagenase and elastase. It also acts as a ROS scavenger, protecting cells from oxidative stress and promoting microvascular integrity.



In one animal study, grape seed extract was found to help minimize the appearance of pigmentation in sun-exposed skin via its antioxidant properties.*

ACTIValue® is a patented extract containing polysaccharides for additional skin structure support. It may stimulate production of matrix proteins and encourage healthy cross-linking, keeping skin firm. Additionally, a recent human cell study indicated that aloe may also promote skin integrity by stimulating proliferation of skin fibroblasts. In fact, the partially digested medium molecular weight

modified aloe polysaccharides (MAPs) in ACTIValoe may enhance fibroblast proliferation better than native aloe, helping to maintain youthful looking skin (Figure 4).*

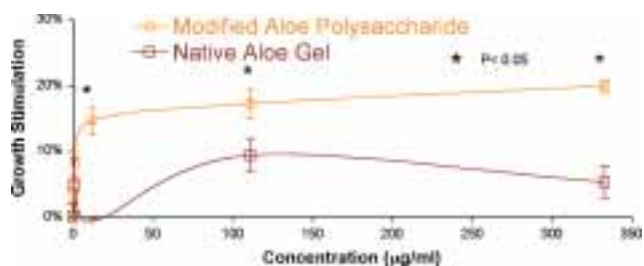


Figure 4: ACTIValoe MAPs stimulate fibroblast cell growth, while native aloe shows less activity.*

Methylsulfonylmethane (MSM) contains 34% sulfur, an element crucial for maintaining healthy connective tissue. Sulfur serves as an important building block of proteins, such as collagen and keratin, providing support and strength to hair, skin and nails. MSM may also act as a free radical scavenger, protecting cells from oxidative stress.*

Restorative Antioxidant and Immune Defense:

HA and aloe also have roles in immune function. One study demonstrated that HA encouraged the migration and maturation of Langerhans cells, promoting cutaneous immune defense. MAPs in ACTIValoe provide immune support by enhancing TNF α release, indicating increased macrophage activity (Figure 5). Aloe also supports the bioavailability of vitamins C and E, further boosting the skin's antioxidant capacity. Furthermore, aloe induces phase II enzyme activity, supporting the detoxification process.*

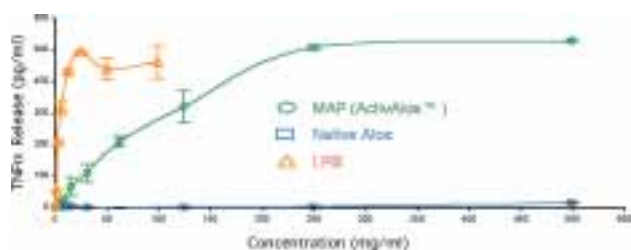


Figure 5: ACTIValoe MAPs activate macrophages, determined by the release of TNF α , to a level comparable to lipopolysaccharide (LPS), while native aloe shows minimal effect.*

Coenzyme Q₁₀ (CoQ₁₀) works as a component of the electron transport chain in all cells to enhance mitochondrial function. This system supplies energy for all cellular processes of the body, including the high demands of skin cell renewal and collagen biosynthesis. It is also one of the only known naturally occurring lipophilic antioxidants present in the skin surface lipids of the epidermis, providing first-line protection from oxidative and environmental assaults. CoQ₁₀ also helps maintain DNA integrity and recycles other powerful antioxidants. Skin levels of CoQ₁₀ increase from childhood through maturity and then gradually decline, leaving skin less protected.*

N-acetyl-L-cysteine (NAC) is a hydrophilic amino acid antioxidant that helps boost cellular glutathione levels depleted by ROS. It also acts independently as a free radical scavenger. Through these protective abilities, NAC has been shown to enhance the immune activity that defends skin from sun exposure. Cell studies have shown that NAC also helps protect keratinocytes from environmental factors, such as toxic chemicals and pollutants.*

Renew & Hydrate P.M.

three vegetable capsules contain		
vitamin C (as ascorbyl palmitate)		30 mg.
coenzyme Q ₁₀ (ubiquinone)		30 mg.
grape (Vitis vinifera) seed extract		100 mg.
(standardized to contain 92% oligomeric proanthocyanidins)	92 mg.	
n-acetyl-L-cysteine (free-form)		100 mg.
methylsulfonylmethane		150 mg.
aloe vera (Aloe barbadensis) extract (inner fillet) (200:1)		100 mg.
(standardized to contain 10% polysaccharides)		10 mg.
hydrolyzed type II collagen† (chicken sternal cartilage).....		1,000 mg.
providing:		
chondroitin sulfate 20%.....		200 mg.
hyaluronic acid 10%		100 mg.
(hypo-allergenic plant fiber added to complete capsule volume requirement)		
3 capsules per day, with 8-10 oz water, in the evening, with a meal.		
	quantity	order code
Renew & Hydrate P.M.	180	RAH1
	90	RAH9

† **BioCell Collagen** is a registered trademark of BioCell Technology LLC, Anaheim, California, USA. U.S. Patents 6,025,327; 6,323,319; 6,780,841 and other U.S. and foreign patents pending.

ACTIValoe™ is a licensed trademark owned by Aloecorp, Inc. U.S. Patent 6,133,440.



Defy the Elements *extra*

What it contains: Advanced antioxidants and specialized extracts for extra skin protection against factors including sun exposure, pollution and stress.*

What it does: Helps revive lack luster skin compromised by the elements and provides added antioxidant, photoprotective and detoxification support to preserve skin function while helping to diminish the general signs of aging.*

Antioxidant Photoprotection Boost:

Tetrahydrocurcumin (THC), a phenolic curcuminoid derivative of the yellow spice turmeric, acts as a powerful antioxidant. In one experiment, THC indicated the strongest antioxidant activity compared to various other curcuminoids (Figure 6). The probable mode of action includes a modulation of superoxide radical and hydrogen peroxide formation, which may be associated with the ability of this compound to protect human keratinocytes. Protective effects may also be due to scavenging of tert-butoxyl and peroxy radicals, defending the lipid membranes of cells.*

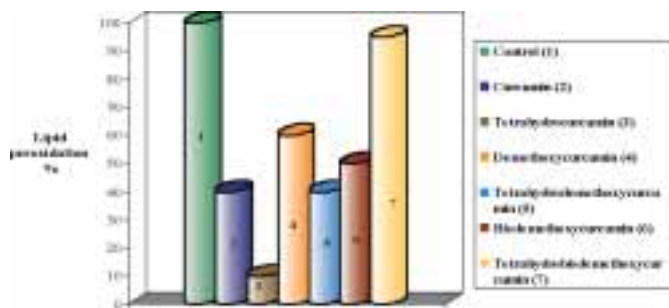


Figure 6: Tetrahydrocurcumin had the strongest antioxidant activity compared to various curcuminoids, minimizing percent lipid peroxidation in erythrocyte membrane.*

BioAstin® astaxanthin, a naturally occurring carotenoid, is specially developed in esterified form for enhanced bioavailability and stability. As a powerful fat and water soluble antioxidant and immune system modulator, it is patented for its photoprotective ability. In a human clinical evaluation, supplementation with BioAstin astaxanthin for two weeks provided notable antioxidant protection for the skin.*

In a cellular study examining antioxidant potential, astaxanthin moderated oxidative stress, as determined by measurements of thiobarbituric acid reactive substances (TBARS) and mitochondrial lipid peroxidation. It may also protect fibroblasts by maintaining healthy glutathione concentrations and superoxide dismutase and catalase activities, boosting skin's natural defenses against sun induced free radicals.*

Furthermore, astaxanthin may maintain healthy arachidonic acid metabolism as well as enhance immune response and T-helper cell activity. Animal studies suggest that it may activate transglutaminase enzyme activity, providing protective cellular responses and tissue homeostasis. It has also been indicated in lessening the appearance of skin pigmentation via its effect on tyrosinase activity. Lastly, it has the potential to help retain dermal collagen fiber bundle structure, minimizing the appearance of wrinkles.*

The least processed of all teas, **white tea extract**, contains high levels of epigallocatechin-3-gallate (EGCG) and other polyphenols for synergistic antioxidant protection. Scientists at the Linus Pauling Institute have suggested that white tea supports liver detoxification enzymes, including glutathione S-transferase activity, boosting antioxidant potential. EGCG is also photoprotective via modulation of transcription factors and MMP activity.*

Detoxification Boost:

The stem bark of varuna extract, or **Crataeva nurvala**, a tree prized in ayurvedic traditions, is a source of saponins, tannins, and triterpenes. Lupeol, the most widely studied triterpene, helps to replenish cutaneous antioxidant enzymes depleted by environmental toxins. In one experiment, lupeol protected microsomal membranes from benzoyl peroxide. It also enhanced recovery of glutathione and the antioxidant enzymes quinone reductase and xanthine oxidase.*

Milk thistle extract, otherwise known as silymarin, provides bioflavonoids for added defense against chemically induced depletion of superoxide dismutase, catalase, and glutathione peroxidase. It also preserves cell membrane integrity by protecting against lipid peroxidation. Moreover, silymarin may also modulate the cellular immune response to sunlight in keratinocytes.*

CelluPhase contains the phytochemicals glucosinolate and sulforaphane from concentrated broccoli extracts. Isothiacyanates, the metabolites of glucosinolates, provide protection from chemically induced oxidative stress by supporting toxin elimination. Studies have found that isothiacyanates induce phase II detoxification enzymes, specifically increasing tissue levels of quinone reductase and glutathione S-transferase. The most well studied isothiacyanate is sulforaphane, which appears to induce phase II enzymes selectively without the induction of phase I enzymes. Sulforaphane also acts to enhance antioxidant activity,

most likely by stimulating γ -glutamylcysteine synthetase, the rate-limiting enzyme in glutathione biosynthesis. One study revealed that cells treated with deleterious oxidants were protected even days after the removal of sulforaphane.*



Defy the Elements *extra*

each vegetable capsule contains	
vitamin C (as ascorbyl palmitate)	10 mg.
tetrahydrocurcumin	100 mg.
(standardized to contain 95% tetrahydrocurcuminoids)	95 mg.
astaxanthin (naturally derived from haematococcus microalgae)	2 mg.
white tea (Camellia sinensis) extract (leaf)	100 mg.
providing:	
polyphenols 80%	80 mg.
epigallocatechin gallate (EGCG) 30%	30 mg.
caffeine 14%	14 mg.
varuna (Crataeva nurvala) extract (bark)	150 mg.
(standardized to contain 1.5% lupeol)	2 mg.
milk thistle (Silybum marianum) extract (fruit)	250 mg.
(standardized to contain 80% silymarin)	200 mg.
CelluPhase	100 mg.
providing:	
broccoli (Brassica oleracea italica) sprout concentrate (20:1) (whole plant)	83 mg.
(standardized to contain a minimum of 332 mcg. sulforaphane)	
broccoli (Brassica oleracea italica/alba) extract (whole plant)	17 mg.
(standardized to contain 4% glucosinolates)	0.7 mg.
1 capsule per day, with a meal.	
	quantity order code
Defy the Elements <i>extra</i>	60 DTE6
	30 DTE3

BroccoPhane[™] is a registered trademark of Cyanotech Corporation. U.S. Patents 6,258,855; 6,344,210 and 6,433,025.

BroccoPhane[™] and BroccoSinolate[™] are trademarks of Cyvex Nutrition, Inc.

Tetrahydrocurcumin is protected by U.S. Patent 6,653,327.

Complementary Support Products

Add emphasis to particular aspects of skin health with any combination of the following products for a customized program:

Essential Fatty Acids:

for extra skin cell nourishment and smoothness*
(These include EPA/DHA fish oils, Krill-Plex, Tri-EFA, Flax seed oil, Flax/Borage oil, Evening Primrose oil and Borage oil).

Hyaluronic Acid:

for extra firming and hydration support*

VitaTrienols:

for extra nourishment, smoothness and protection*

Lutein and/or Lycopene:

for extra protection from sun induced free radicals*

l-Carnosine:

for extra collagen support and cell rejuvenation*

Phosphatidylcholine:

for extra moisture retention and cell integrity*

l-Proline and/or l-Lysine:

for extra firming support*



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Protect & Nourish A.M.

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Renew & Hydrate P.M.

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