

DC Detoxdefense™

INCI: Water (and) Cordyceps Sinensis Extract (and) Phospholipids (and) Butylene Glycol (and) Beta Vulgaris (Beet) Root Extract

April 4, 2013 rev.

RON1524

Multi Layer Vesicles of Concentrated Skin Protection

DC Detoxdefense™ is a “smart ingredient” comprised of multi-layer, phospholipid-based vesicles concentrated with protective and detoxifying extracts. By supporting the skin’s own DNA and cell protection, DC Detoxdefense™ defends against premature aging and helps maintain a healthy, beautiful complexion.



Highly skin compliant, DC Detoxdefense™ is readily absorbed by the skin offering optimal delivery of potent, naturally-occurring antioxidants and cell regulating compounds. These main components work synergistically for maximum skin protection:

- ◆ **Cordyceps**, a mushroom-like fungus rich in minerals amino acids and vitamins, used throughout Asia for many centuries to help to maintain and improve health: Proven efficacious in increasing the ATP (energy) production in the mitochondria of human cells. Increases cellular superoxide dismutase (SOD) for a protective effect.
- ◆ **Soy** phospholipids to improve elasticity and restore lipid barrier function.
- ◆ **Beet** extract rich in glycosidic antioxidants to detoxify and protect from free radicals, while its naturally occurring betaines bind water providing for excellent humectancy.

BENEFITS

- ◆ Stimulates skin’s own antioxidant protection (SOD)
- ◆ Protective against UV radiation
- ◆ Protects collagen
- ◆ Improves skin integrity by strengthening dermal/epidermal junction
- ◆ Increases skin’s own detoxification mechanism

APPLICATIONS

- ◆ Anti-aging
- ◆ Toners
- ◆ Anti-acne
- ◆ Daily protection
- ◆ Sun care
- ◆ Detoxifying

TYPICAL PROPERTIES

Appearance	Milky brown liquid
Odor	Characteristic
pH	4.75 - 6.75
Specific Gravity	0.980- 1.150

FORMULATION GUIDELINES

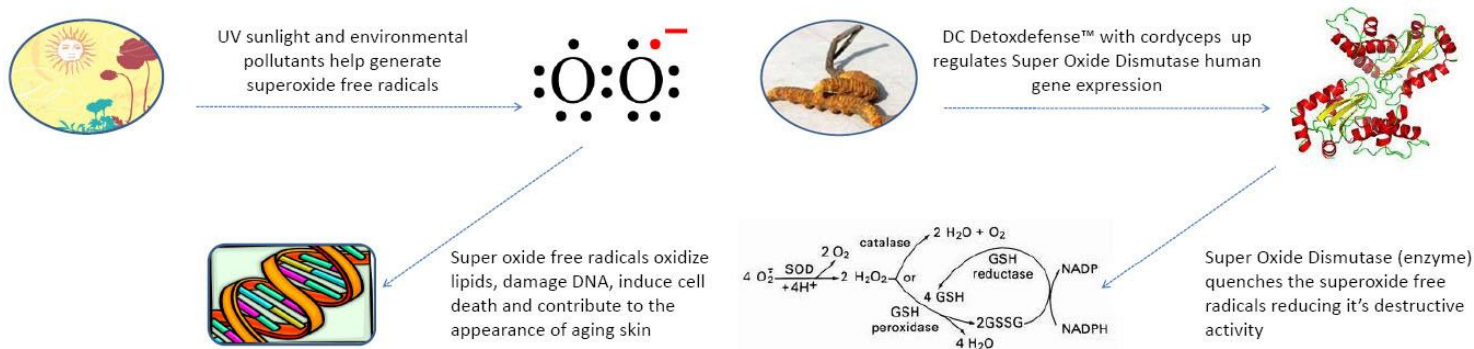
Recommended Use Level	1.0-3.0%
	Use at pH 4-7. Disperse in emulsion or gel at or below 40°C

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Page 2 of 2

MECHANISM



MODULATION OF GENE EXPRESSION

Gene Name	Significance	Modulation (%)
Matrix metalloproteinase-8 (MMP8)	Involved in the breakdown of extracellular matrix (ECM)	-24
Collagen XV, α1	Adheres basement membranes to underlying connective tissue stroma. Maintains cell structure and integrity	+15
Superoxide dismutase-2, mitochondrial (SOD2)	Enzyme which transforms toxic superoxide into H2O2 and oxygen	+70
Laminin α2	Important protein of ECM responsible for cellular organization	+19
Cytochrome P450	Enzyme responsible for cell metabolism (detoxification) and bioactivation	+22

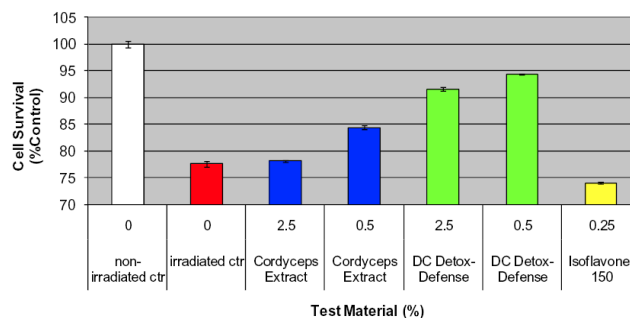
Method:

- ◆ EpiDerm tissues
- ◆ Test Material- DC Detoxdefense™ at 0.5% (vol:vol)
- ◆ The incubation time with skin tissues- 3 days
- ◆ RNA extraction with Qiagen kit
- ◆ RNA assayed twice by electrophoresis (after extraction and before microarray analysis)

UV PROTECTION

Method:

- ◆ EpiDerm tissues
- ◆ Test materials – Isoflavones at 0.25% (w:v), Cordyceps and Detox Defense at 2.5% and 0.5% (vol:vol)
- ◆ Treated samples incubated 48h, then UVB irradiated for 1 MED
- ◆ Following the irradiation, skin substitutes were incubated again for 16 hours
- ◆ Cell viability determined using the standard MTT method



Skin substitute tissues treated with DC Detoxdefense™ showed a significant improvement in cell viability after UV exposure demonstrating the powerful cell protective properties of this ingredient.

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