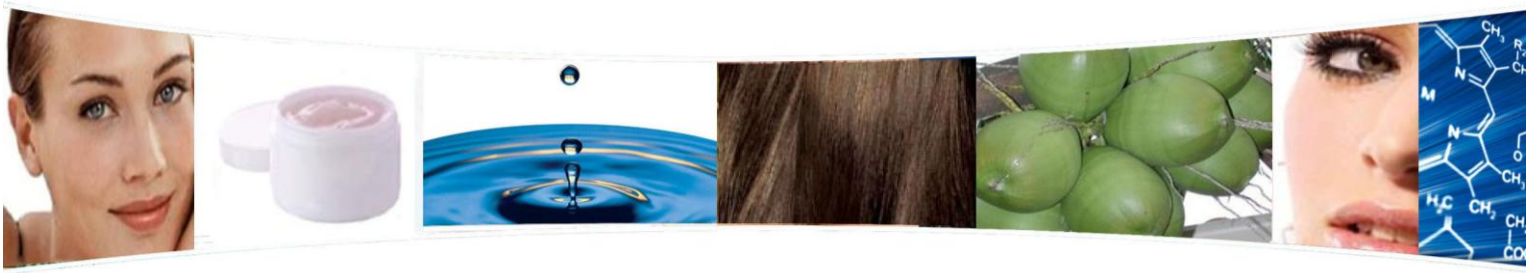
Distinctive® Coconut Waters

Wellness and Cellular Renewal

Coconut Water is the liquid collected from green, unripe coconuts. This liquid is rich in proteins, amino acids, sugars, vitamins, compounds such as:

- **Cytokinins**: Kinetin, a plant growth substance active in promoting cell division and in cell growth and differentiation. In personal care applications, it is believed to be a key component in providing effective cell renewal activity to both skin and hair (scalp) treatments.
- **Electrolytes**: Calcium, potassium, and magnesium. Coconut Water is an isotonic solution which can be used to help replace the body's fluids and minerals and help normalize cell function.
- **Monolaurin**: An antiviral, antibacterial and antiprozoal monoglyceride that is used to kill lipid-coated viruses such as HIV, Herpes, cytomegalovirus, flu and various pathogenic bacteria.



The **Distinctive® Coconut Water** Series is comprised of several products made from the cold-processed juice of unripened coconuts. By using only a feedstock of cold-processed coconut water concentrate, the line retains valuable nutrients and antioxidants producing a superior inhibition of advanced glycation end products (AGEs).

BENEFITS

- anti-microbial/ anti-fungal
- antiaging
- anti-viral
- revitalizing/regenerating
- remineralizing
- moisturizing
- refreshing
- balancing

	Distinctive® Coconut Water CLEAR - DC3868	Distinctive® Coconut Water ORG - DC3869	Distinctive® Coconut Water ENCAP - DC3870
INCI	Cocos Nucifera (Coconut) Water (and) Glycerin (and) Cocos Nucifera (Coconut) Fruit Juice	Cocos Nucifera (Coconut) Water (and) Glycerin (and) Cocos Nucifera (Coconut) Fruit Juice	Glycerin (and) Magnesium Silicate (and) Silica (and) Phospholipids (and) Cocos Nucifera (Coconut) Fruit Juice
Description	A filtered concentrate of coconut water offers full clarity for clear gel cosmetic formulations.	A concentrate prepared from organic coconut water; slightly hazy in appearance.	A glycerin powder-encapsulated coconut water; excellent delivery for powder-based formulations.
Usage	The recommended level for use in cosmetic gels and emulsion is 5-80%.	The recommended level for use in cosmetic emulsion formulations is 5-80%.	The recommended use level to achieve measurable moisture activity on skin is 6-8% in pressed or loose powders.

RESOURCES OF NATURE

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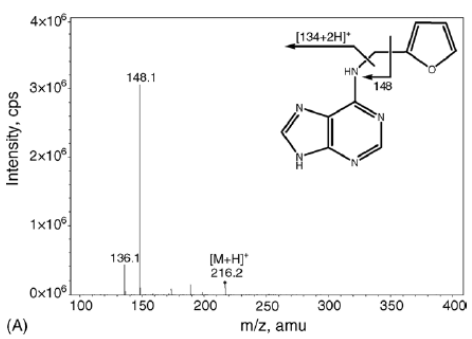
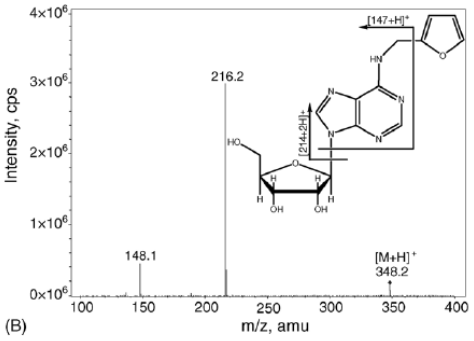
Glycation, sometimes referred to as the Maillard reaction, is a process typically associated with aging and oxidative damage in which certain sugar molecules chemically bond to proteins or lipids without the moderation of an enzyme. When glycation occurs in the skin, it causes the crosslinking of collagen and elastin resulting in a loss of skin flexibility, elasticity and resilience. In addition, it leads to the production of advanced glycation end products (AGEs), highly reactive free radicals and oxidizers which further the glycation process and initiate harmful inflammatory and autoimmune responses.

Identification of Kinetin and Kinetin Riboside in Coconut Water Using Liquid Chromatography

Both kinetin and kinetin riboside were detected and quantified in the endosperm liquid of fresh young coconut fruits. The presence of kinetin and kinetin riboside in coconut water is of significant importance since kinetin has been reported to have therapeutic medicinal and anti-aging effects



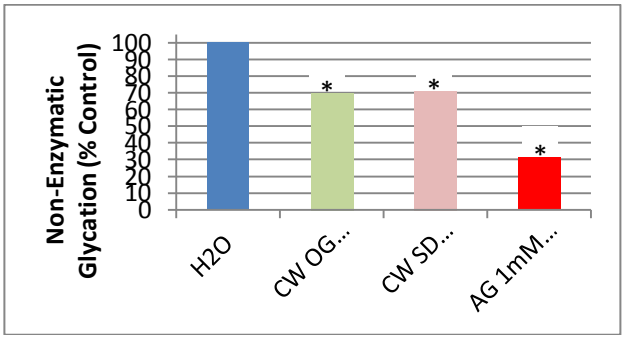
Kinetin



Kinetin Riboside

Effect of 1mg/ml CW OG and 1mg/ml Coconut Water SD on Non-Enzymatic Glycation (NEG) expressed as the % of Water Control

Statistically-significant inhibitory samples ($p<0.05$/deviation from ctr ≥20%) are marked with asterisk



AG: Aminoguanidine
SD: Heated/Spray Dried Coconut Water
OG: Organic Cold Processed Coconut Water

Both tested materials exhibited a dose-dependent inhibition of non-enzymatic glycation demonstrating their beneficial potential for the use in skin care products. The positive control - aminoguanidine – showed strong inhibitory activity, as expected, demonstrating the technical success of the experiment.

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Inhibition of Protein Oxidation and Glycoxidation by Kinetin

Data suggests that kinetin is a strong inhibitor of oxidative and glycoxidative protein-damage generated in vitro. Kinetin was tested for protection against oxidative and glycoxidative protein damage generated in vitro by sugars and by an iron/ascorbate system. It was found was more efficient than adenine:82% vs 49% inhibition of bovine serum albumin (BSA)-pentosidine formation. Kinetin also inhibited the formation of BSA-carbonyls after oxidation significantly more than adenine did. Both compounds inhibited the advanced glycation end product (AGE) formation to the same extent (59-68% inhibition)

PRESSED POWDER WITH COCONUT WATER ENCAP			
PHASE	**INGREDIENT**	**% BY WEIGHT**	**SUPPLIER**
A	Mica (and) Aluminum Dimyristate	33.60	
A	Mica	6.50	
A	**Distinctive® Coconut Water ENCAP**	**6.00**	**Resources of Nature, LLC**
A	Zinc Myristate	7.00	
A	Mica (and) Silica	7.00	
A	**Distinctive® Silken K**	**10.00**	**Resources of Nature, LLC**
A	**Natural Finish™ RON Ti 12 Si-TR**	**2.00**	**Resources of Nature, LLC**
A	Iron Oxide (C.I. 77492) (and) Magnesium Myristate	1.00	
A	Iron Oxide (C.I. 77499) (and) Magnesium Myristate	0.10	
A	Iron Oxide (C.I. 77491) (and) Magnesium Myristate	0.30	
B	Coco-Caprylate/Caprate	3.00	
B	Octyldodecyl Stearoyl Stearate	3.00	
B	Bis-Diglyceryl Polyacyladipate-2	0.50	
B	Preservative	q.s.	
		100.00	

In main vessel, combine Phase A ingredients. Blend and micro pulverize for 4 minutes. Combine Phase B and mix until uniform. Add Phase B to Phase A and micro pulverize for 4 minutes in 30 second intervals. Press at 1500 psi for 7 seconds.

REFERENCES

- Liya Ge, Jean Wan Hong Yong, Ngoh Khang Goh, Lian Sai Chia, Swee Ngin Tan, Eng Shi Ong, "Identification of kinetin and kinetin riboside in coconut (Cocos nucifera L.)", Journal of Chromatography B, Vol. 829 (2005) 26–34
- Verbeke P, Siboska GE, Clark BF, Rattan SI, "Kinetin inhibits protein oxidation and glycoxidation in vitro", Biochem Biophys. Res. Commun., 2000 Oct 5;276(3):1265-70