

Distinctive™ Coconut Water

Skin Refreshing Coconut Water



Distinctive™ Coconut Water CLEAR

INCI : Cocos Nucifera (Coconut)
Liquid Endosperm (and)
Glycerin (and)
Cocos Nucifera (Coconut)
Fruit Juice

CAS #: 8001-31-8

EC #: 232-282-8

Anti-aging

Moisturizing

**Revitalizing &
Refreshing**

Osmotically Balanced

Waterless Platforms

Cold processed coconut water with rich invaluable nutrients and anti-oxidants.

Coconut water has been used for centuries in tropical countries for its hydrating properties, and its popularity elsewhere has taken off in recent years. It is perfectly suited for one of the hottest trends today – health and wellness. Coconut water naturally contains electrolytes, amino acids, vitamins, cytokinins and minerals that provide key benefits for beautiful, healthy skin and hair. It is nature's most perfect water to replenish hydration, detoxify, fortify and fine tune skin's everyday functions. This incredible water also protects against glycation and free radicals, preventing accelerated aging. In addition, coconut water is a great substitute for water in formulations.

Coconut water is the liquid collected from ripe coconuts and has been a staple in the ingestible health market for years. Distinctive™ Coconut Water is made from the cold-processed juice of ripened 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), skin brightening, and protection from free radicals caused by the environment.

Recommended applications



Skin Care



Sun Care



Hair Care



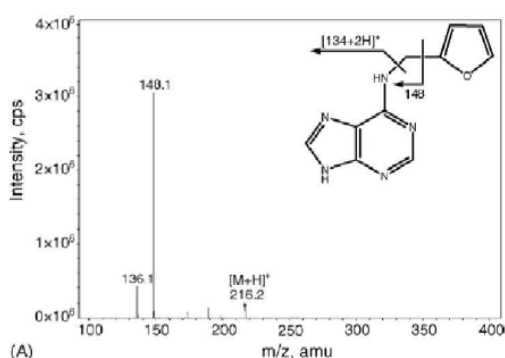
Color Cosmetics



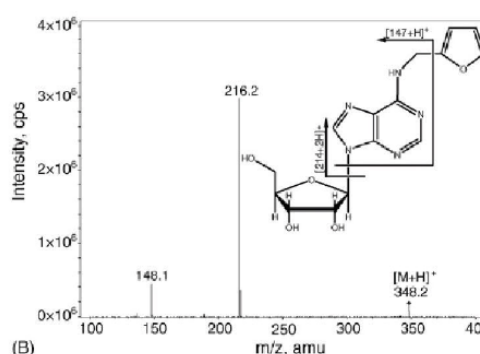
 Vantage

Active composition

- Distinctive™ Coconut Water is produced using cold-processed coconut water concentrate to retain the valuable nutrients and antioxidants. Coconut water contains amino acids, vitamins, minerals, electrolytes and cytokinins such as kinetin and kinetin riboside. Cytokinins are known to promote cell division, cell growth and differentiation in plants.
- In skin cells, kinetins have been shown to:
 - Demonstrate antioxidant and anti-aging effect on the skin
 - Induce repair enzymes
 - Delay the onset of cellular characteristics associated with aging
- Kinetin has been shown to reduce wrinkles, improve skin texture, reduce erythema and decrease signs of mottled hyperpigmentation



Kinetin

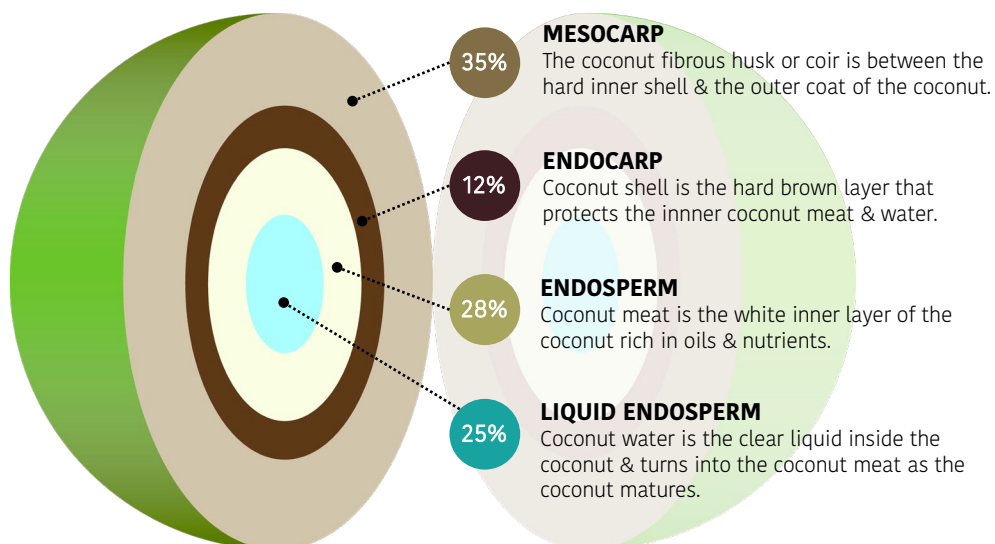


Kinetin Riboside

Epstein HA, Kinase: the science behind the technology, *Skinmed*, 2004 Nov-Dec;3(6):339
 Chiu PC, et. al., The clinical anti-aging effects of topical kinetin and niacinamide in Asians, *J Cosmet Dermatol*. 2007 Dec;6(4):243-9.
 Ge L, et. al., Identification of kinetin and kinetin riboside in coconut (*Cocos nucifera* L.) water *J Chromatogr Analyt Technol Biomed Life Sci*. 2005 Dec 27; 829(1-2):26-34.

Activity from the core of coconuts

- Distinctive™ Coconut Water is mostly made up of *Cocos Nucifera* (Coconut) Liquid Endosperm.
- The edible part of the coconut fruit is the endosperm tissue. The endosperm consists of a thin gelatinous layer of jelly that provides nourishment to the developing coconut. The jelly eventually develops into thick, firm, white meat.
- Nutrients from coconut water are obtained from the seed apoplasm (surrounding cell wall) and are transported into the endosperm.



Angeles J et al. Towards the Understanding of Important Coconut Endosperm Phenotypes: Is there an Epigenetic Control? *Argonomy*. 2018 Oct 13; 8(225):1-19
 Shaw M, et. al., Purine-Like Substances from Coconut Endosperm and Their Effect on Senescence in Excised Cereal Leaves, *Plant Physiol*. 1964;39:528-532
 Yong J, et. al., The Chemical Composition and Biological Properties of Coconut (*Cocos nucifera* L.) Water. *Molecules*. 2009; 14(12): 5144-5164

Anti-glycation effect

Distinctive™ Coconut Water reduces protein glycation by 32%.

Assay principle

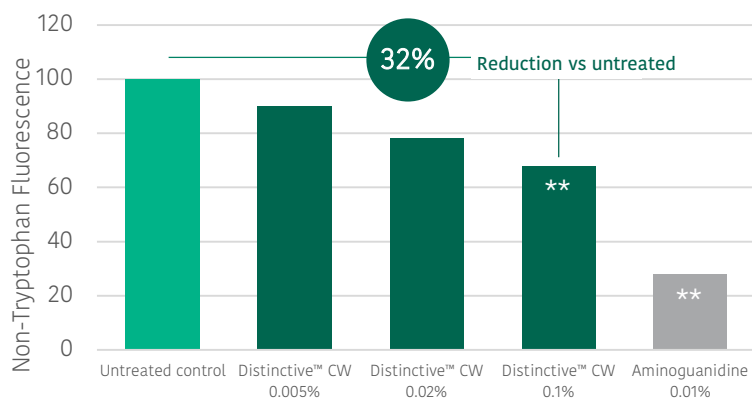
Excess sugars bind to proteins in skin such as Collagen and Elastin



Result in Advanced Glycation End products (AGE) and skin inflammation and aging

Ingredients that prevent protein glycation can be studied using a biochemical assay with albumin as a model protein shown below

Anti-glycation effect of Distinctive™ Coconut water



** Statistically significant modulation ($p < 0.05\%$) vs untreated control

Method

Following reactions were set up 10mg/ml albumin + 500mM glucose + 0.025% sodium azide along one of with the following components

- Untreated Control
- 0.005% Distinctive™ Coconut Water
- 0.02% Distinctive™ Coconut Water
- 0.1% Distinctive™ Coconut Water
- 0.01% aminoguanidine Test

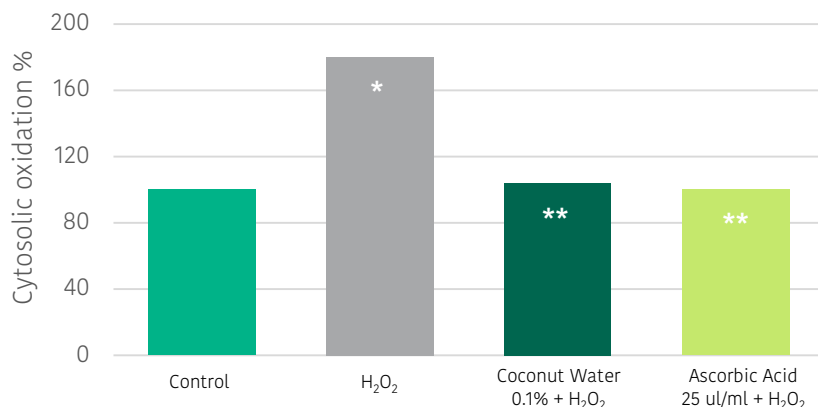
Samples were incubated with the reaction mixture for 24 days at 37C. Protein glycation was detected by measuring the increase of non-tryptophan fluorescence (409/460nm) using Cytofluor 4000 (Applied BioSystems)

Method based on - Suzuki and coll. (1992) with modifications.

Prevention of intercellular reactive oxygen species

Coconut water was found to prevent the generation of intracellular reactive oxygen species, thus displaying strong anti-oxidant properties.

Inhibition of Intracellular Reactive Oxygen Species



*significantly different ($p, 0.05$) compared with the Control group
** significantly different ($p, 0.05$) compared with the H₂O₂ group

Method

Fibroblasts cells were pre-incubated with Coconut Water at 0.1 or 1% final conc or Ascorbic Acid 25 μ g/mL

Cells were washed and exposed to the same equitoxic concentrations of H₂O₂ (100 μ M) for 5 minutes and measurement was made after 20 minutes of fluorescent DCFH-DA incubation., which measures the accumulation of intracellular ROS

Distinctive™ Coconut Water

Skin Refreshing Coconut Water

| | |
|-----------------------|---|
| Appearance @25°C | Clear liquid |
| Odor | Characteristic |
| pH | 4.0-5.0 |
| Recommended Use Level | 5-80% |
| Regulatory Details | PCPC, China IECIC 2015*, (ISO16128: 100%) |

Preservative System: Sodium Benzoate and Potassium Sorbate

*IECIC 2015 lists as Cocos Nucifera (Coconut) Water

Formulation guidelines

Distinctive™ Coconut Water can be used in skin care, hair care, and color cosmetic formulations. It can be easily added with medium propeller mixing either in the beginning of the formulating process or after phase combination, depending on the type of formula. The ideal pH range for systems containing Distinctive™ Coconut Water is between 4.0-5.0. In skin care, Distinctive™ Coconut Water is recommended for use in products to provide revitalization and moisturization to the skin.