

## **ENERGY WATER**

STC Cosmetics Active Ingredient - Energy Water

STC 에너지워터



# STC Cosmetics Active Ingredient

STC Nara is developing cosmetics and health supplement products using Energy Water and researching on its application in agriculture.

Energy Water and Energy Salt were developed by Dr. Lee, who founded the STC Stem Cell Treatment & Research Institute. Energy Water is made with clean underground water from over 150m deep, by filtering impurities potentially harmful to biological body. It is functional water produced by passing through volcanic rock of several kinds emitting far infrared ray and loadstone holding electromagnetic field and beneficially influences many fields such as the human body, animal, agriculture, and environment.

Founded in 1989 with the principles of contributing to mankind by developing cell treatment with a righteous mind, STC Stem Cell Treatment & Research Institute, together with the Stem Cell Research Center, Agricultural Life Sciences Research Center, Lifestyle Sciences Research Center, New Drugs Development & Research Center and the Gene Research Center are moving towards making the young 100 Years & healthy 120 years into a reality.

In 2013, STC discovered the newly Elicited Stem Cell without side effects (STC-nEPS) for the first time in the world. Using the same, STC has successfully differentiated into a pancreatic  $\beta$  - cell, chondrocyte, osteoblast, adipocyte, hepatocyte, and neurocyte. We are now in the process of developing every tissues and organs with the rapidly evolving 3-D printing technology.

As a leading life sciences company, STC's mission lies in contributing to the mankind by developing treatments for incurable diseases with its leading stem cell based technology and Energy Water, a new growth factor.



www.stclife.com

### STC Cosmetics Active Ingredient - Energy Water

### [Introduction]

## I. Genesis

Energy water originated from Alternative Medicine Studies. Energy water was developed in the stage that structure and function of cell - a basic unit of organism - in the molecular level were studied to apply to treatment. Water is a good material in applying any result of researches of it to alternative medicine as water amounts to the most in and out of cell and its role is the most important.

Alternative medicine focuses understanding of a disease rather on overall concept of a patient than on local symptom of the incurred region to grasp for an original cause of the disease and make an internal condition to enable an organism itself to overcome the disease and recover to normal condition.

Wide treatment with energy water is generalized as follows ;

- Using natural recovery ability of an organism
- Attaching importance rather to cause than to result
- Harmless to an organism
- Top priority of prevention.

## II. Identity

Water amounts to 60% of an organism and is a material essential to maintain life. Energy water seeks rearrangement of water molecule cluster by externally given electromagnetic power and addition of small number of inorganic ion with pure base rock water to recover biological activity of cells in an organism and maintain natural (original) status.

## **III. Major Functions**

- Promotion of injury recovery For example, promote regeneration of injury of scar.
- Activation and normalization of bio-function Activate normal bio-function to recognize external harmful environment and to make power to resist it. Anti-cancer effect is a result of such action.
- Nutrient balance in an organism Balance inorganic ions or nutrients in an organism through maintenance of homeostasis to prevent diseases.
- Growth promotion Promote growth of plant to improve productivity.
- Increase of natural healing force by strengthening of immunity Prevent allergic diseases and help an organism to self-protect from a disease through strengthening of natural recovery ability
- Inhibition of Aging of skin and cell by antioxidant function Relieve the progress of skin aging to be likely occur by ROS
- Dandruff removal, hair-loss prevention and hair-growth promotion Harmless and non-stimulative to an organism, used as excellent source water for hair treatment
- Activation of microorganism Promote activation of intestinal effective bacillus to maintain healthy condition of the digestive organ
- Environmental purification Recover polluted soil and promote dirty water nad waste water for environmental purification
- Mitigation of harmful substance Convert some of harmful substance to chemically non-toxic substance
- Small cluster and good emulsifying effect Making easy to pass through the skin moisture blocking layer, and thanks to good emulsifying effect, increase skin absorption efficiency of effective elements in use as source water of cosmetics.

\* Result Summary : The Biological Activities of Energy Water and Energy Salt : Experimental results in vitro and in vivo Korea Molecular Medicine and Nutrition Research Institute



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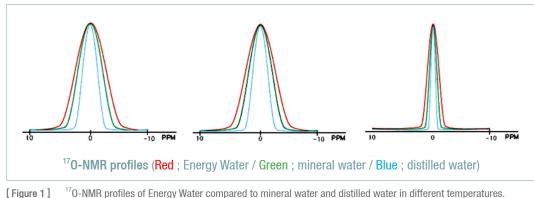
### **Diffusion / Emulsion**

Emulsification is distributing non-polar elements of oils in polar solvent such as water uniformly or distributing polar elements in oil solvent and is a very important process in production of cosmetics.

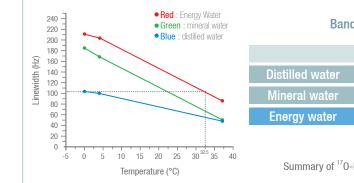
Emulsion by Energy Water showed smaller and uniform distribution of oli droplet than tap water. It can be understood that energy water has oil-friendly structure on the interface with oil by reducing interfacial tension through its unique histological molecular arrangement (Fig. 16).



Physical Properties by <sup>17</sup>0-NMR



Energy Water showed more broad spectrum compared with other waters.



### Cytotoxicity reduction

ROS can cause serious physiological disorders including biological membrane lysis, lipid peroxidation, proteolysis, photosynthesis inhibition, DNA synthesis inhibition, and aging promotion in vivo (Cerutti, 1985; Cohen, 1988; Halliwell and gutteridge, 1984).

Cultured HDFs in different media were exposed to hydrogen peroxide to analyze the SOD, CAT, GPx activities. (Table 1) As a conclusion, Energy Water does not have as much activity as antioxidant but reduced cytotoxicity. Therefore, it is considered that energy water can be used as a raw material of cosmetics, food and medical supplies and prevent skin aging.

### [Table 1] Inhibition rate of intracellular antioxidant enzyme activity changes (%).

	SOD	CAT
Antioxidant	83.8	203.7
Energy water	24.7	94.0



vidths in <sup>17</sup> (		(Unit : Hz)
0 °C	4 °C	37 °C
102.8	100.4	48.2
185.1	168.7	51.6
210.4	203.9	86.8
	ns in different	[Figure 2]



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### Experiment on hair growth effect with hair follicle cell

Hair follicle cells from human scalp were cultured in the presence of energy water, and the expression of mitogen activated protein (MAP) kinase Erk-1/2 (signal transduction substance related to cell multiplication) was increased which means enhancement of hair follicle cell proliferation (Fig. 3).

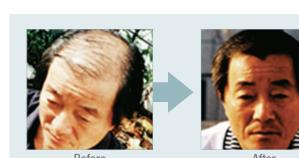


Mice were treated with hair toner containing Energy Water, and hair growth was enhanced (Fig. 4).



[Figure 4] Immunoblot analysis of Erk1/2 in Primary cultured Human normal hair follicle cell. C (control cells) ; A, B (hair toner treated cells)

Treatment of human scalp and hair with Energy Water showed that scalp and hair condition were improved. (Fig. 5 and Fig. 6)



Before



[Figure 5] Clinical results of hair toner.



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[ Application of Energy Water ]

## Agro - Livestock and Fishing Industry



Harvesting more crops with Energy Water



Healthy and disease-resistant farm products



Food preservation and distribution



Revolutionary solution of food shortage

## Human Body and Living





Healthier drinking with Energy Water



Energy Water for baby food





Softer drinking with Energy Water



Healthier food with Energy Water

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## Humman Body and Living

Cell 97.7

Stem Cell Conditioned media specialized cosmetic brand based on 25 years" research and technology



STC Biotechnology Cosmetics

### - Brands -

www.allthatskin.com



Promotes human skin"s recovery mechanism to make skin healthy by itself



## Iamu

Hypoallergenic cosmetics using plants extracts & natural ingredients and minimizing skin irritation



Make up & Skin treatment for your modern and sensuous life style

ⓒ solutions 1:1 맞춤형 화장품



The best choice for your skin, customer-specific cosmetics will best fit your specific needs



## Humman Body and Living





Safe Energy Water detergent which removes chemical toxic material





## **ENERGY WATER**

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