



In PCHi China 2018, "CHRONO CHARDY" received two awards "Active Ingredients Award" & "R&D Award"

*Treatment of dry and rough skin caused by irregular lifestyle and stress*

Natural Cosmetic Ingredient

# CHRONO CHARDY

<Vitis Vinifera (Grape) Fruit Extract>

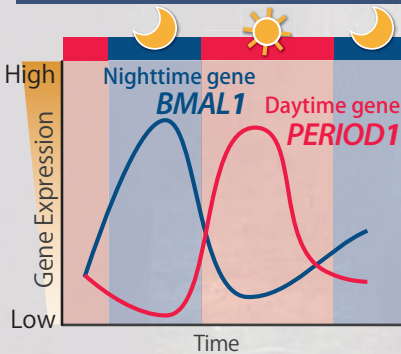


## 24HR CHRONO BEAUTY

**CHRONO CHARDY** enhances Genetic skin circadian rhythm

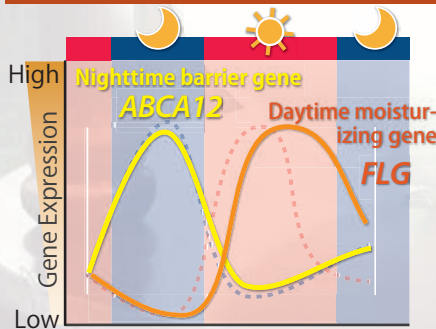
### Genetic circadian rhythm and skin condition

#### Clock genes of circadian rhythm



In living bodies, expressions of nighttime clock gene "BMAL1" and daytime clock gene "PERIOD1" are regularly changing in a 24 hour cycle, creating a daily rhythm (circadian rhythm).

#### Circadian rhythm related genes of skin



Responding to the clock genes, **ABCA12** and **FLG** (flaggrin gene), which play an important role in skin moisturizing function, are activated and produce a steady rhythm to repair and maintain the skin.

Irregular lifestyle reduces genetic skin rhythms, resulting in skin problems.

Skin troubles (Sensitive skin)

Reduced moisture content of skin  
Lowered ability to recover the skin's barrier function

When genetic skin rhythm is weakened by lack of sleep, irregular lifestyle, or stress, the moisture content of skin and the ability to recover barrier function are reduced, resulting in many skin troubles such as unstable condition and sensitive skin.



CHRONO CHARDY / G are listed in the Inventory of Existing Cosmetic Ingredient in China 2015.

## Place of origin of CHRONO CHARDY



St. Cousair Winery Oiri Vineyards

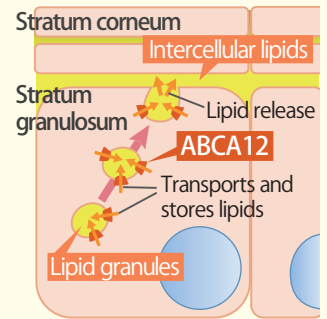
Chardonnay used in CHRONO CHARDY is a type of high-quality grape grown in the vineyards of St. Cousair Winery located in a scenic hilly district at a 650 meter altitude in Iizuna Town, Nagano, JAPAN.



## The transporter of lipids that are essential to form skin's barrier "ABCA12"

ABCA12, exists on lipid granules in the keratinocyte at epidermal granular layer, transports and stores lipids within granules. When ABCA12 encounters functional disorders, the skin's barrier cannot be formed properly, resulting in serious skin disorders\*.

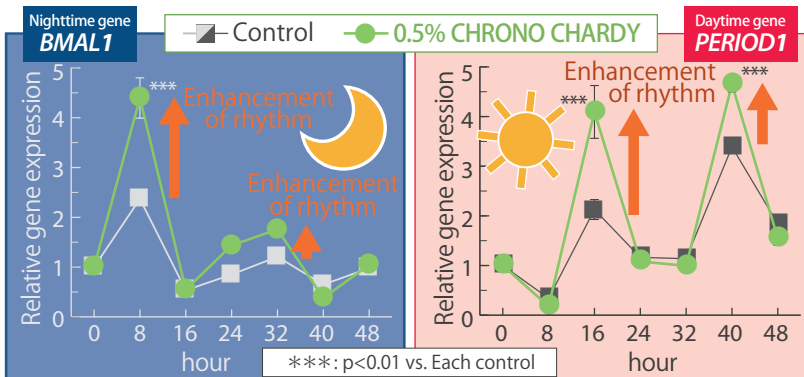
\* Akiyama M, et al. : J. Clin. Invest., 2005.



Function of ABCA12

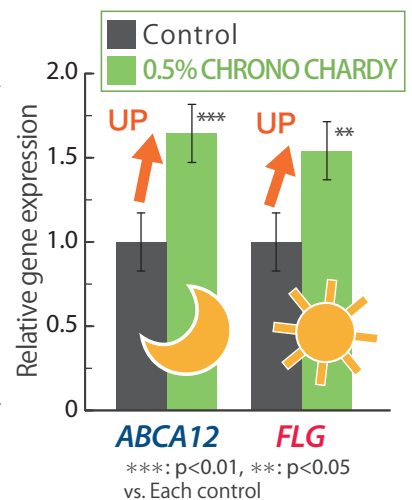
## Action to enhance the clock genes of circadian rhythm

0.5% CHRONO CHARDY was added to cultured human epidermal cells (HaCaT) and then *BMAL1* and *PERIOD1* mRNA expressions were analyzed every 8 hours. CHRONO CHARDY enhanced the expression rhythm of clock genes "*BMAL1* and *PERIOD1*".



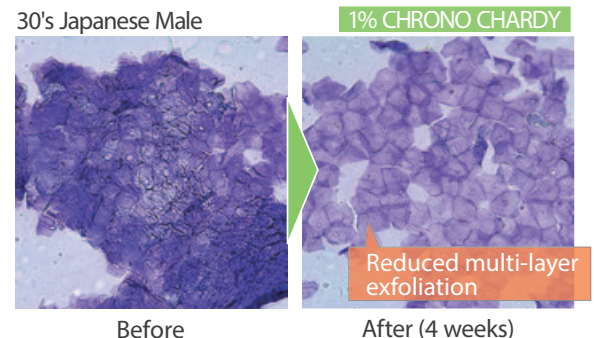
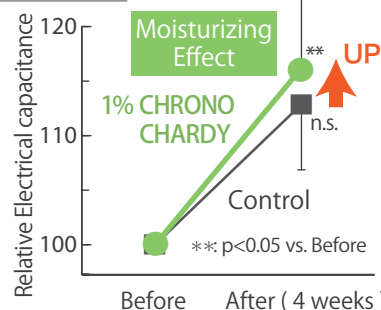
## Action to promote the expression of ABCA12 and FLG genes

CHRONO CHARDY was added to cultured human epidermal cells (HaCaT), RNA of the cells was collected when each expression rhythm of *ABCA12* and *FLG* (filaggrin) genes peak, and *ABCA12* and *FLG* mRNA expressions were analyzed. CHRONO CHARDY is expected to have actions to increase the *ABCA12* and *FLG* mRNA expressions and intensify the rhythm of the expression of these genes.



## Action to improve skin condition of stressed people

A lotion containing 1% CHRONO CHARDY was applied to the cheeks of 13 male and female subjects in their 30's to 50's who indicated in the questionnaire that they were stressed to a certain level in their regular lives. Skin conditions were compared before and after the test. The moisture content in the areas to which CHRONO CHARDY was applied was significantly increased and the stratum corneum conditions were improved including reduced multi-layer exfoliation.



Product Specification		
Product Name	CHRONO CHARDY	CHRONO CHARDY G
Description	Yellowish brown to brown liquid, having slightly characteristic odor	
Identification	Tannin	
Purity	Heavy metals 20 ppm max., Arsenic 2 ppm max.	
INCI	Water, Butylene Glycol, Vitis Vinifera (Grape) Fruit Extract	Glycerin, Water, Vitis Vinifera (Grape) Fruit Extract
IECIC 2015	水, 丁二醇, 葡萄 (VITIS VINIFERA) 果提取物	甘油, 水, 葡萄 (VITIS VINIFERA) 果提取物

Any ingredient may cause irritation such as allergies. Please exercise enough caution when using it.

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