

# Galactooligosaccharide for Skin Health Improvement effect

## Galactooligosaccharide powder (NeoGOS-P70)



**[Functionality recognized by Korea Ministry of Food and Drug Safety] It can help skin health damaged from UV**

Daily intake: 2g/day of Galactooligosaccharide powder (NeoGOS-P70)

Galactooligosaccharide powder (NeoGOS-P70), which is a high-purity Galactooligosaccharide (GOS), has unique physiological activity as a prebiotics, and has been verified for skin health improvement through *in-vitro* & *in-vivo* evaluations and human application tests.

### Characteristics of Galactooligosaccharide powder (NeoGOS-P70)

Helps improve skin health (Ingredient individually recognized for health functionality)	Skin health effects have been verified through <i>In-vitro</i> , <i>in-vivo</i> , and clinical tests.
Patent registered ingredient	High-purity Galactooligosaccharide has been developed by increasing the content of Galactooligosaccharide with a patented manufacturing technology.
Strength in merchandising	Applicable to a variety of products with light sweetness.
Stability	Stable in pH and temperature.

### Skin improvement effect of Galactooligosaccharide powder (NeoGOS-P70) (animal evaluation result)

#### [Effect of on skin moisture retention]

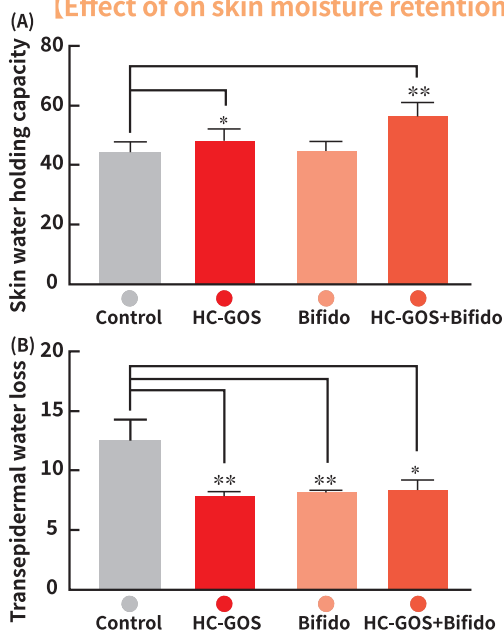


Figure 1. Effect of Galactooligosaccharide powder (NeoGOS-P70) on improving skin condition damaged by UV

1) Control (+UVB, saline intake), 2) HC-GOS (+UVB, Galactooligosaccharide powder (NeoGOS-P70) 100mg intake group, 3) Bifido (+UVB, Bifidobacteriumlongum 109 CFU intake group, 4) HC-GOS+Bifido (+UVB, Galactooligosaccharide powder (NeoGOS-P70) 100mg + Bifidobacteriumlongum 109 CFU) intake group, 6 mice per group, SKH-1 hairless mice, 12 weeks 12 week. \* $p < 0.05$ , \*\* $p < 0.01$   
Source: *Int J Food Sci Nutri*, 2015; 66(8); 923-930

(A) As a result of comparing the water holding capacity of UV-treated skin after oral administration of the NeoGOS-P70 into hairless mice to evaluate the skin water holding capacity, the skin water holding capacity significantly increased compared to the control group. ( $p < 0.01$ )

(B) As a result of comparing the transepidermal water loss (TEWL) of UV-treated skin after oral administration of NeoGOS-P70 into hairless mice to evaluate the transepidermal water loss, the water loss significantly decreased in the Galactooligosaccharide powder (NeoGOS-P70) intake groups compared to the control group ( $p < 0.05$ )

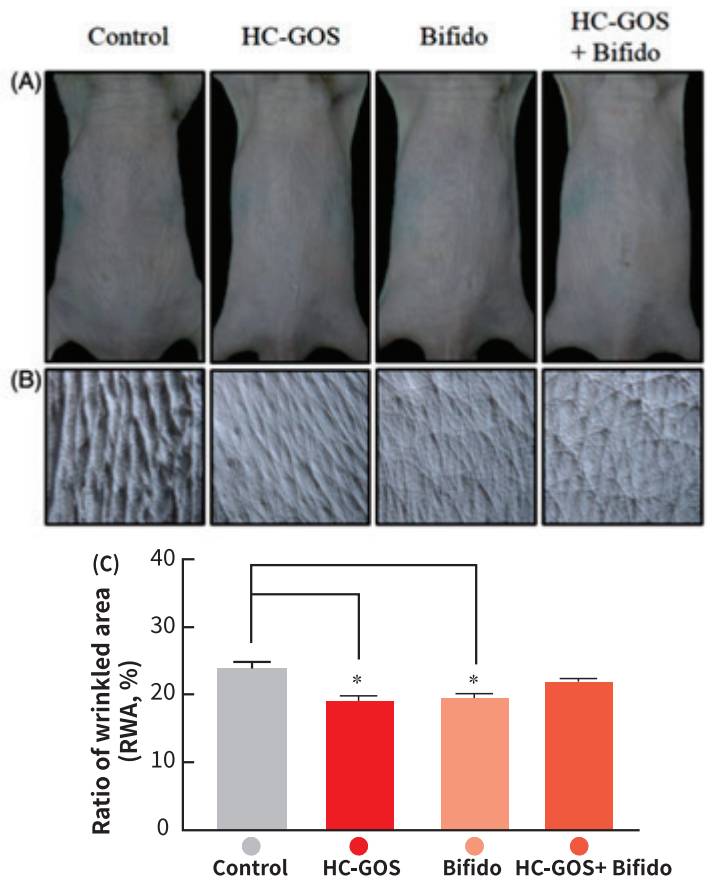


Figure 2. Effect of Galactooligosaccharide powder (NeoGOS-P70) on improving wrinkles on skin surface

1) Control (+UVB, saline intake), 2) HC-GOS (+UVB, Galactooligosaccharide powder (NeoGOS-P70) 100mg intake group, 3) Bifido (+UVB, Bifidobacteriumlongum 109 CFU intake group, 4) HC-GOS+Bifido (+UVB, Galactooligosaccharide powder (NeoGOS-P70) 100mg + Bifidobacteriumlongum 109 CFU) intake group, 6 mice per group, SKH-1 hairless mice, 12 weeks 12 week. \* $p < 0.05$ , \*\* $p < 0.01$   
Source: *Int J Food Sci Nutri*, 2015; 66(8); 923-930

As a result of related tests of UV-treated skin and analyzing the ratio of wrinkled area through skin surface molding after oral administration of NeoGOS-P70 into hairless mice to evaluate skin wrinkle improvement effects, the ratio of wrinkled area significantly decreased in the Galactooligosaccharide powder (NeoGOS-P70) intake groups compared to the control group ( $p < 0.05$ ).

**[Collagenase inhibition effect]**

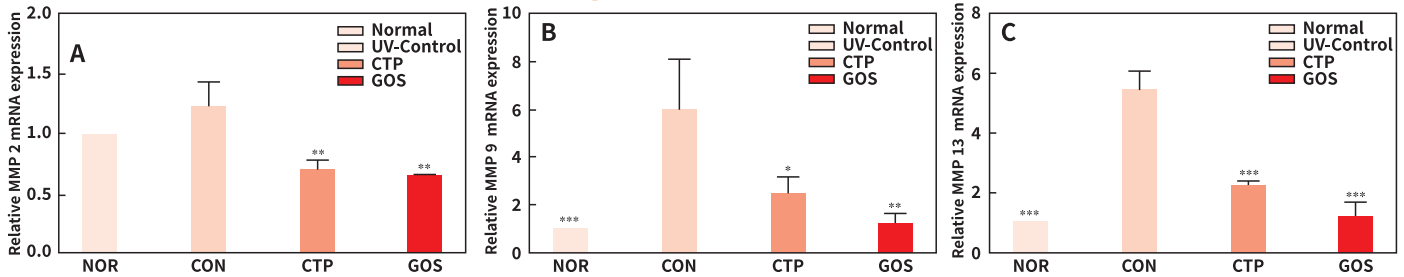


Figure 3. Inhibition effect of MMPs expression of Galactooligosaccharide powder (NeoGOS-P70)

1) NOR (-UVB), 2) Control (+UVB), 3) CTP (+UVB, low molecular collagen 200 mg intake), 4) GOS (+UVB, Galactooligosaccharide powder (NeoGOS-P70) 200 mg intake), 8 mice per group, SKH-1 hairless mice, 8week. \* $p < 0.05$ , \*\* $p < 0.01$  and \*\*\* $p < 0.001$  (Source: *Molecules* 25.7) 2020: 1679

**Skin improvement effect of Galactooligosaccharide powder (NeoGOS-P70) (human clinical test)**

• Confirmed skin improvement effect after intake of Galactooligosaccharide powder (NeoGOS-P70) in Korean adults

**[The results of the human clinical test are not the same for everyone]**

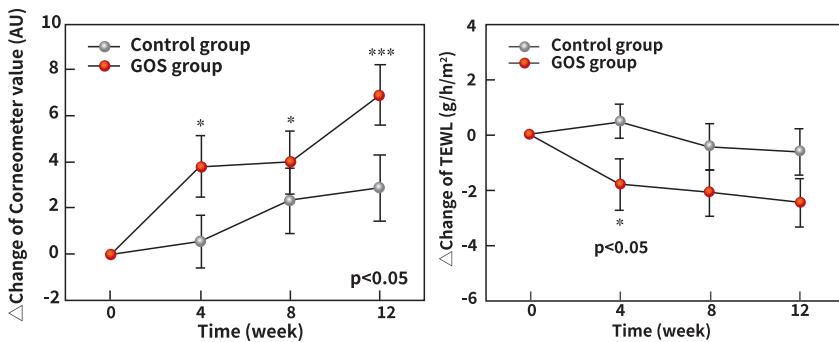


Figure 4. Effects of improving skin water condition\* $p < 0.05$  (Source: *Asia Pac J Clin Nutr* 2017; 26(4); 613-618)

As a result of measuring the water holding capacity (Corneometer value) and TEWA (Trans epidermal water loss) of healthy men and women in their 40s and 60s who participated in the clinical trial, after taking 2g/day of Galactooligosaccharide powder (NeoGOS-P70) for 12 weeks, the water holding capacity increased significantly up to 4 weeks, 8 weeks, and 12 weeks. (week 4 ( $p < 0.05$ ), week 8 ( $p < 0.05$ ), and week 12 ( $p < 0.001$ )) TEWA (Trans epidermal water loss) significantly decreased at week 4 ( $p < 0.05$ )

**[Effect of improving skin wrinkles]**

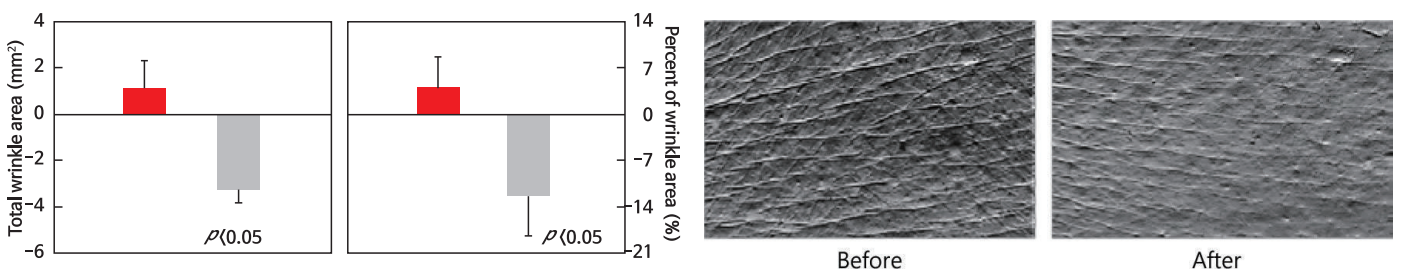


Figure 5. Replica of external region of ophthalmic skin before and after intake of Galactooligosaccharide powder (NeoGOS-P70) \* $p < 0.05$  (Source: *Asia Pac J Clin Nutr* 2017; 26(4); 613-618)

As a result of observing the indicators of total wrinkle area and percent of wrinkle area using the skin replica of clinical subjects to measure skin surface changes, both of them significantly decreased and skin condition improved after 12 weeks of intake of Galactooligosaccharide powder (NeoGOS-P70).

**Product Information**

Item	Quality specification	Item	Quality specification
Appearance	White powder with unique flavor without bad taste or odor	Mercury	$\leq 0.1$ mg / kg
Galactooligosaccharide powder	700 mg/g (80~120% of indicated amount)	Coliform group	Negative
Lead	$\leq 1.0$ mg / kg	Packing unit	20kg
Arsenic	$\leq 0.1$ mg / kg	Accreditation number	No.2021-8
Cadmium	$\leq 0.1$ mg / kg		