

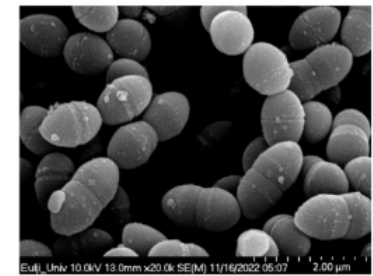
Branded Health Ingredients

The Green Innovator

Branded Functional Materials by BK bio

1. LactoCut: Weight Loss Probiotic Derived from Jeju Cabbage

- **Brand Name:** LactoCut
- **Ingredient Name:** Glucose, *Lactococcus lactis* subsp. *lactis* CAB701
- **Manufacturing Method:** Fermentation, Freeze drying
- **Functions & Features:**
 - **Main Functions:** Body fat reduction, immune activation, antioxidant, and gut health
 - **Marker Compound:** Probiotics 10 to 100 billion CFU
 - **Human Clinical Trial Results (Yongsan Pusan National University Hospital):**
 - Confirmed a significant reduction in body fat mass of approximately **0.87 kg** ($p < 0.001$)
 - **Subjects & Duration:** 100 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe without adverse reactions during 12 weeks of long-term consumption
 - * Note: Results may vary by individual.
 - **Recommended Intake:** 10 to 100 billion CFU/day as probiotics
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR1020230146232
 - **Journal:**
 - *Probiotics Antimicrob Proteins*. 2025 Jun;17(3):1203-1216.
 - *Microorganisms*. 2023 Jun 30;11(7):1718.



Efficacy Results Summary : Clinical Test

Stage	Analysis Item	Analysis Item	Statistical Significance
In-vitro (Cellular)	Adipocyte differentiation inhibition	67.0% Inhibition	Significant
In-vivo (Animal)	Adipocyte size	22.4% Reduction	Significant
Human Clinical Trial	Body fat mass reduction	0.87 kg reduction	p < 0.001 secured
Cell Test	Intestinal epithelial cell adherence	75.2% Adherence	Superior

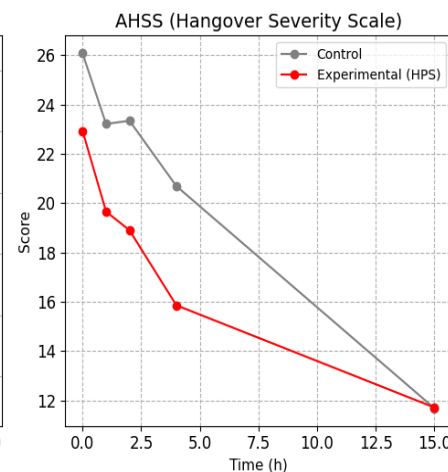
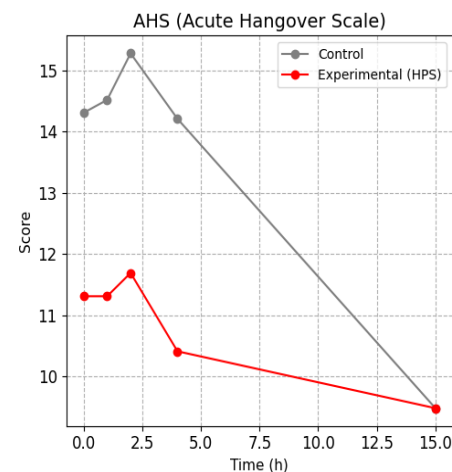
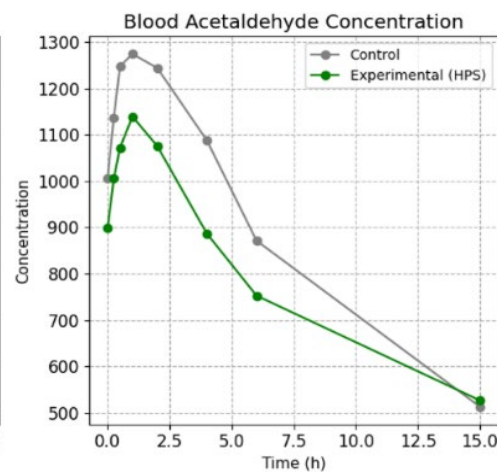
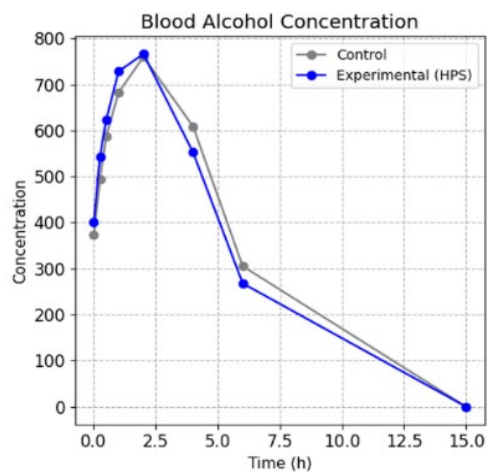
2. JejuRecov.: The Power of Jeju Nature in Alcohol Detoxification

- **Brand Name:** Jeju Recov.
- **Ingredient Name:** *Dendropanax morbiferus*, *Ecklonia cava*
- **Manufacturing Method:** Ethanol extraction
- **Functions & Features:**
 - **Main Functions:** Promotion of alcohol metabolism, reduction of toxic substances, antioxidant, and liver protection
 - **Marker Compound:** Chlorogenic acid, Dieckol
 - **Human Clinical Trial Results (Global Medical Research Center):**
 - Confirmed an **18.5% reduction** in acetaldehyde (hangover-inducing substance) after 4 hours
 - Confirmed a maximum **26.7% improvement** in perceived hangover severity after 4 hours
 - **Subjects & Duration:** 30 adult men and women, single intake before drinking (Crossover)
 - **Safety:** Proven safe through 15 hours of *intensive monitoring post-intake*
 - **Note: Results may vary by individual.*
 - **Recommended Intake:** 1.34 g/day as *Dendropanax & Ecklonia cava* extract
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-1958969
 - **Journal:** *Food Eng. Prog.* 2018; 22(2):110-117.



Efficacy Results Summary : Clinical Test

Test	Time Point	Control Group	Experimental Group	Significance	Reduction Rate (%)
Blood Acetaldehyde Concentration	After 4h	1087.9	886.6	0.001	18.5
Blood Acetaldehyde Concentration	After 2h	1244.6	1075.8	0.013	13.6
Blood Alcohol Concentration	After 4h	608.77	552.29	0.033	9.3
AHSS (Hangover Severity)	After 4h	20.69	15.86	0.043	23.3
AHS (Acute Hangover Degree)	After 2h	15.28	11.69	0.046	23.5
AHS (Acute Hangover Degree)	After 4h	14.21	10.41	0.049	26.7



3. Sargacud: Hair Health and Growth

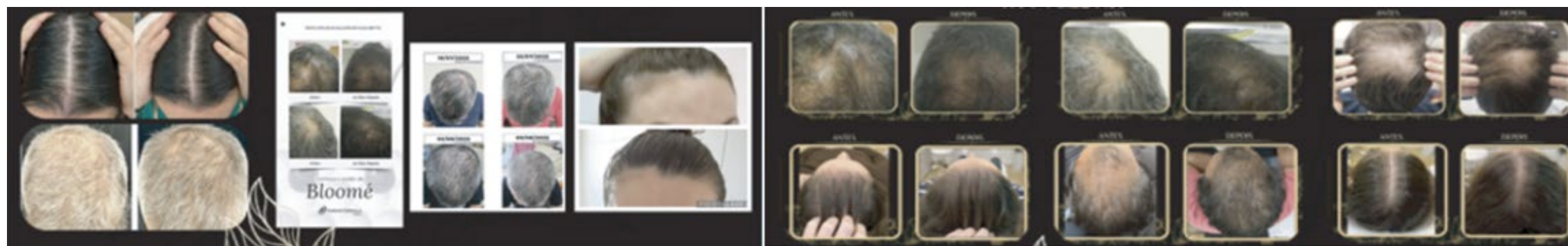
- **Brand Name:** Sargacud
 - **Ingredient Name:** *Hizikia fusiforme*, *Cudrania tricuspidata*
 - **Manufacturing Method:** Ethanol extraction
 - **Functions & Features:**
 - **Main Functions:** Hair follicle activation (**Awake**) and high-concentration nutritional supply (**Feed**)
 - **Marker Compound:** Chlorogenic Acid 600 ppm or more
 - **Human Clinical Trial Results (Global Medical Research Center):**
 - Significant improvement in hair diameter (**+2.32%**) and gloss (**+3.30%**) ($p < 0.001$)
 - **Subjects & Duration:** 20 adult men and women, consumed for 8 weeks
 - **Safety:** Proven safe without adverse reactions during 8 weeks of long-term consumption
 - * Note: Results may vary by individual.
 - **Recommended Intake:** 500 mg/day as *Sargassum* & *Cudrania* extract
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-2884771, KR 10-2207989 (*Cudrania tricuspidata*)
 - **Journal:** *Lab Anim Res.* 2023 Feb 17;39(1):4.



Efficacy Results Summary : Clinical Test

Stage	Evaluation Parameter	Key Results & Efficacy
In-vitro (Cellular)	Dermal Papilla Cell Proliferation	Recorded 119% growth rate in hHDFP cells, outperforming Minoxidil (107~108%).
In-vivo (Animal)	Hair Regrowth Speed	Significantly faster regrowth speed observed on days 9–11 vs. the Minoxidil group.
Human Clinical Trial	Hair Diameter (Thickness)	Significant +2.32% increase in hair diameter compared to the placebo group.
Human Clinical Trial	Hair Shine (Glossiness)	Significant +3.30% improvement in hair glossiness index ($p < 0.001$).

Before and After: Transformative Results First Month



4. BrocoPower: Enhancing Muscle Strength

- **Brand Name:** BrocoPower (Superccoli series)
 - **Ingredient Name:** *Brassica oleracea* var. *italica*
 - **Manufacturing Method:** Pulsed electric field processing, Ethanol extraction
 - **Functions & Features:**
 - **Main Functions:** Enhancement of muscle function, antioxidant, and anti-inflammatory
 - **Marker Compound:** Glucoraphanin, Sulforaphane
 - **Human Clinical Trial Results (Yongsan Pusan National University Hospital):**
 - Proven significant improvement in grip strength (approx. **2.9 times** greater than control) ($p < 0.001$)
 - **Subjects & Duration:** 100 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe without adverse reactions during 12 weeks of long-term consumption
 - * *Note: Results may vary by individual.*
 - **Recommended Intake:** 500 mg/day as broccoli extract
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR1020250017048
 - **Journal:** *Journal of Medicinal Food* Vol 29 No 4 (April 2026)



Efficacy Results Summary : Clinical Test

Test	Control Group (Δ)	Test Group (Δ)	Intergroup Significance	Remarks
Handgrip Strength (Left, kg)	+0.49 \pm 0.82	+1.43 \pm 1.74	p < 0.001	~2.92x improvement vs. Control
Handgrip Strength (Right, kg)	+0.69 \pm 0.79	+1.83 \pm 1.51	p < 0.001	~2.65x improvement vs. Control

Isokinetic Strength (Biodex) Increase

The change in right quadriceps strength was numerically higher in the Test group (11.09 N·m) compared to the control group (8.11 N·m), confirming the efficacy of broccoli extract in assisting exercise-driven muscle improvement.

Physical Performance Improvement

Overall SPPB total scores, including gait speed and chair stand time, significantly improved in both groups. This suggests the physical activity support capability of broccoli extract as a metabolic booster during exercise.

Efficacy Outcome: Significant Improvement in Handgrip Strength

Clinical Result: ~2.9x Significant Improvement in Handgrip ($p < 0.001$)



■ Placebo (Control): Light Gray ■ Broccoli Extract (Test): Vibrant Green *** $p < 0.001$ vs Control

5. Brocogni: Brain Health and Cognitive Enhancement

- **Brand Name:** Brocogni (Superccoli series)
- **Ingredient Name:** *Brassica oleracea* var. *italica* (Broccoli Sprout)
- **Manufacturing Method:** Pulsed electric field processing, Ethanol extraction
- **Functions & Features:**
 - **Main Functions:** Inhibition of cognitive decline, neuroprotection, and antioxidant activity in the brain
 - **Marker Compound:** Glucoraphanin, Sulforaphane
 - **Human Clinical Trial Results (Yongsan Pusan National University Hospital):**
 - Significant improvement in Cognitive Summary Score (CST) ($p < 0.001$)
 - **Subjects & Duration:** 100 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe without adverse reactions during 12 weeks of long-term consumption

** Note: Results may vary by individual.*

 - **Recommended Intake:** 1,000 mg/day as broccoli sprout extract
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-2089588
 - **Journal:** *Foods*. 2025 Aug 29;14(17):3059.

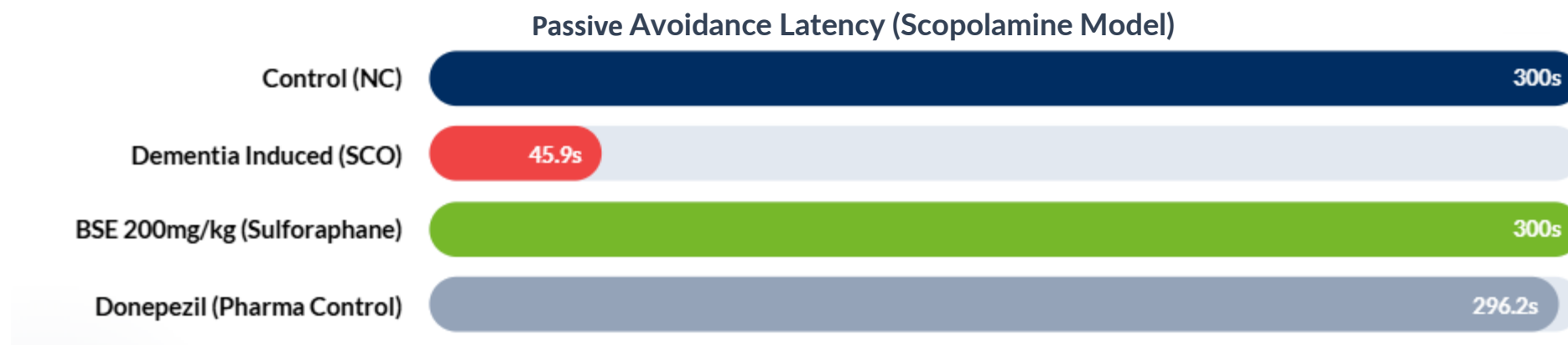


Efficacy Results Summary : Clinical Test

Test	Placebo Change	BSE Group Change	Statistical Significance
Total Cognitive Score (CNT)	+6.01	+18.56	p < 0.001
Verbal Memory Index	+4.36	+11.54	p = 0.006
Digit Span (Forward)	-0.13	+0.35	p < 0.001
Serum BDNF (Neurotrophic)	No Change	Significant Increase	P = 0.003

"Statistical significance (p < 0.001) confirms Sulforaphane improves attention, working memory, and neurotrophic factor levels in humans."

Memory Recovery Data (Animal Model)



*The Broccoli Sprout Extract (BSE) demonstrated a **complete reversal** of scopolamine-induced memory impairment, outperforming the standard drug in latency duration.*

6. Brocometa: Dual Care for Obesity and Diabetes

- **Brand Name:** Brocometa (Superccoli series)
- **Ingredient Name:** *Brassica oleracea* var. *italica* (Broccoli leaf)
- **Manufacturing Method:** Pulsed electric field processing, Ethanol extraction
- **Functions & Features:**
 - **Main Functions:** Body fat reduction, blood sugar stabilization, improvement of insulin sensitivity, and antioxidant
 - **Marker Compound:** Glucoraphanin, Sulforaphane
 - **Experimental Results:** AMPK activation and improvement of insulin resistance
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-2402445 (Immunity), KR 10-2438435 (Fatty Liver)
 - **Journal:**
 - *J Nutr Biochem.* 2022 Feb;100:108885
 - Anti-diabetic effects of broccoli leaf (KSVS, 2021)



Efficacy Results Summary

Metric	Obese Control (ob/ob)	BLE Treated (500mg/kg)	Net Improvement
Blood Triglycerides (TG)	2.7 mmol/L	1.2 mmol/L	-56%
Fasting Glucose	460 mg/dL	232 mg/dL	-50%
LDL Cholesterol	38.5 mg/dL	232 mg/dL	-33%

"Sulforaphane enhanced biotransformation."

Component	Standard Method	PEF Optimized Method	Enhancement
Sulforaphane (SFN) Cont.	16.8 mg/unit	39.9 mg /unit	+137% increase

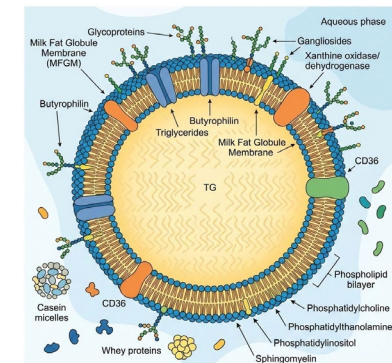
TRIGLYCERIDE (TG) CONCENTRATION



BLE treatment demonstrates a 56% reduction in serum TG levels, outperforming the standard diabetic drug Metformin in lipid control.

7. Milkogni: Enhancing Brain Vitality and Cognition

- **Brand Name:** Milkogni
 - **Ingredient Name:** Milk Phospholipids
 - **Manufacturing Method:** Ultrafiltration, Ethanol extraction
 - **Functions & Features:**
 - **Main Functions:** Brain cell membrane composition, neurotransmitter activation, and improvement of memory/cognition
 - **Marker Compound:** Sphingomyelin 1% or more
 - **Human Clinical Trial Results (Yongsan Pusan National University Hospital):**
 - Significant **23% increase** in attention and concentration (Auditory CPT) relative to the placebo group
 - **Subjects & Duration:** 100 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe during 12 weeks of consumption
- * Note: Results may vary by individual.*
- **Recommended Intake:** 500 mg/day as milk phospholipid extract
 - **Origin:** Korea, Germany
- **Reference**
 - **Patent:** KR1020240062252, PCT/KR2024/020955
 - **Journal:** *J Am Oil Chem Soc.* 2025;102(3):467-476.

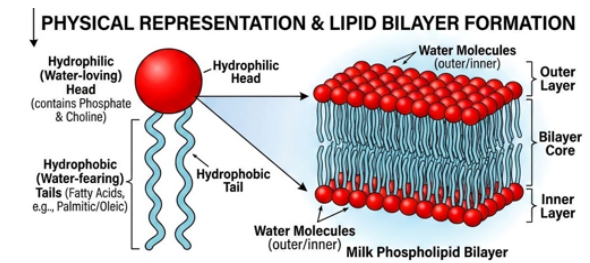


Efficacy Results Summary : Clinical Test

Test	Endpoint (Method)	Absolute Change (Test Group)	Relative Efficacy (vs. Placebo)
Attention	Auditory CPT Score	+3.81 Points Intra-group improvement	23% Higher Improvement Inter-group efficacy (p=0.045)
Global Cognition	CNT Total Score	+1.31 Points	Positive Improvement Trend
Neuroprotection	BDNF Stabilization	Loss Inhibited	Improvement Trend
Antioxidant	MDA Inhibition	-0.01 Levels	Lowering oxidative stress

8. Skin Cerami: Skin Moisturizing Effect and Anti-Wrinkle Improvement

- **Brand Name:** Skin Cerami
- **Ingredient Name:** Milk Ceramide, Phospholipid
- **Manufacturing Method:** Ultrafiltration, Concentration, Spray drying
- **Functions & Features:**
 - **Main Functions:** Anti-photoaging (UVB) and antioxidant, skin moisturizing, and inhibition of wrinkle formation
 - **Marker Compound:** Glucosylceramide 3.1 mg/g
 - **Human Clinical Trial Results (Global Medical Research Center):**
 - Significant improvement in the three major skin indicators (moisture, elasticity, wrinkles) and subjective assessment ($p < 0.001$)
 - **Subjects & Duration:** 89 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe during 12 weeks of consumption
- * *Note: Results may vary by individual.*
- **Recommended Intake:** 1,200 mg/day as milk cream concentrate powder
- **Origin:** Korea, Germany
- **Reference**
 - **Journal:** *Antioxidants (Basel)*. 2022 Sep 13;11(9):1804.



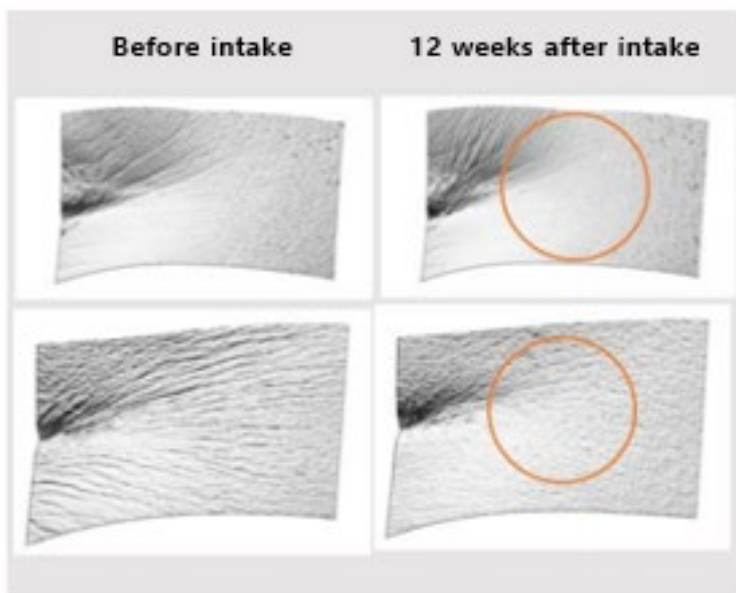
Efficacy Results Summary : Clinical Test

Test	Expert Evaluation Results	Statistical Significance (p-value)
Skin Moisture (Hydration)	Significant improvement	p < 0.001
Skin Elasticity	Significant improvement	p < 0.001
Skin Wrinkles	Significant reduction	p < 0.001
Self-Assessment	Significant positive improvement	p < 0.001

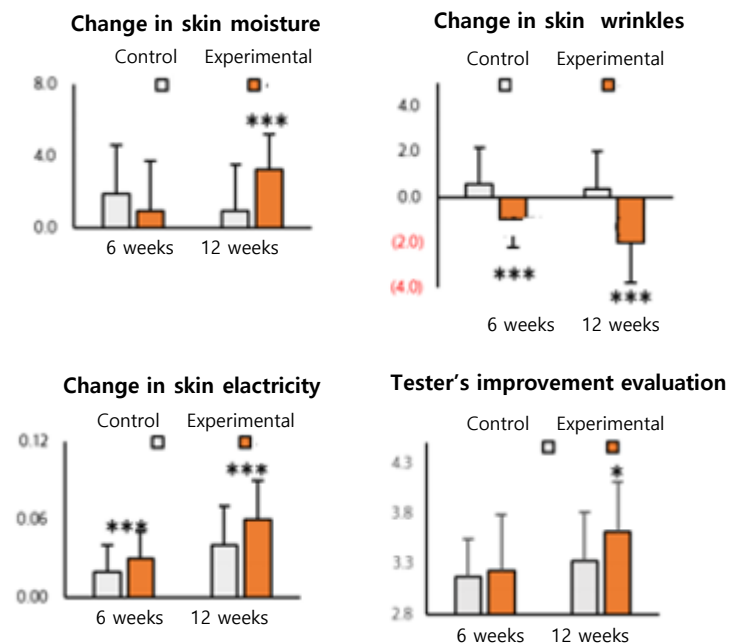
"Inhibits UVB-induced photoaging and boosts collagen to fundamentally strengthen the skin barrier."

Changes in skin moisture and wrinkles when consuming 1.2g of milk ceramide for 12 weeks

Change of skin wrinkles

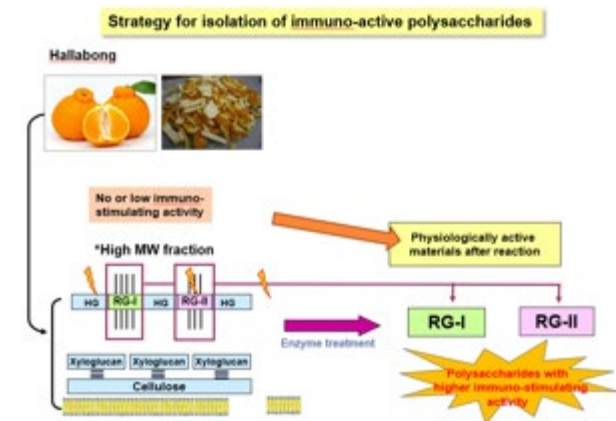


Changes in skin moisture, wrinkles, and elasticity expert evaluation



9. Immune Polys: Immunity Enhancement and Anti-Cancer Effects

- **Brand Name:** Immune Polys
- **Ingredient Name:** *Citrus Hallabong*
- **Manufacturing Method:** Bioconversion
- **Functions & Features:**
 - **Main Functions:** Immune activation and anti-cancer effects
 - **Marker Compound:** Rhamnogalacturonan
 - **Human Clinical Trial Results (Ilsan Hospital Health Center):**
 - Significant improvement in NK cell activity (+48.3%) ($p < 0.05$)
 - **Subjects & Duration:** 100 adult men and women, consumed for 12 weeks
 - **Safety:** Proven safe during 12 weeks of consumption
 - * *Note: Results may vary by individual.*
 - **Recommended Intake:** 100 mg/day as Hallabong polysaccharide (RG-II)
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-1530982 (Immunity), KR 10-1561648 (Anti-cancer)
 - **Journal:**
 - *Carbohydr Polym.* 2014 Oct 13;111:72-9.
 - *Food Funct.* 2016 Jun 15;7(6):2833-9.



Efficacy Results Summary : Clinical Test

Test	Before (pg/mL)	After (8weeks)	Outcome Summary
IL-12	42.4 ± 5.5	53.9 ± 5.6	Immune Boost (p=0.027)
IFN-γ	5.57 ± 2.1	9.48 ± 1.8	Anticancer Activity (p=0.037)
IL-6	2.92 ± 0.3	2.43 ± 0.3	Inflammation Reduced (p<0.01)
IL-1β	0.55 ± 0.0	0.51 ± 0.0	Inflammation Reduced (p<0.01)

Conclusion: Optimized immune balance through NK cytotoxicity enhancement (+63.6%).

10. Ecklo Sleep: Natural Sleep Aid for Sound Sleep

- **Brand Name:** Ecklo Sleep
- **Ingredient Name:** *Ecklonia cava*
- **Manufacturing Method:** Water extraction
- **Functions & Features:**
 - **Main Functions:** Improvement of sleep quality and antioxidant
 - **Marker Compound:** Dieckol
 - **Human Clinical Trial Results (Seoul Sleep Center, SNU):**
 - Significant reduction in sleep latency ($p < 0.05$)
 - Increase in Stage 3 sleep (the deepest sleep stage)
 - Reduction in Wake After Sleep Onset (WASO)
 - **Subjects & Duration:** 24 adult men and women, 500 mg for 1 week (Polysomnography)
 - **Safety:** Proven safe through 1 week of consumption and follow-up
 - * *Note: Results may vary by individual.*
 - **Recommended Intake:** 500 mg/day as *Ecklonia cava* extract
 - **Origin:** Jeju, Korea
- **Reference**
 - **Patent:** KR 10-1592251
 - **Journal:** *Phytotherapy Research*, 2018, 32(4), 698-704



Efficacy Results Summary : Clinical Test

Test	Phlorotannin Group Impact	Placebo Change	Significance
Sleep Onset Latency (SOL)	Significant Reduction	Negligible Change	p < 0.05
Wake After Sleep Onset (WASO)	25.5 min Reduction	1.7 min Reduction	p = 0.045
Total Sleep Time (TST)	Increased Duration	Baseline Stability	p < 0.05
Sleep Efficiency	Global Quality Improvement	No Change	Verified
RDI during Supine REM	Stabilized Respiration	Index Increased	p = 0.035

**Abbreviations: PSG (Polysomnography), SOL (Sleep Onset Latency), WASO (Wake After Sleep Onset).*



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