Excrete glycation products

Satonceil

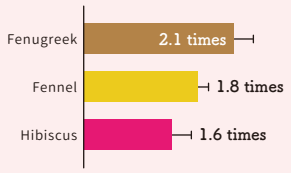
What is Satonaceil?

Satonaceil is a herb mix that has been screened with the objective of excreting the advanced glycation end products (AGEs) that have accumulated in the body, with a focus on accelerating AGEs metabolism and the cleavage of AGEs cross-linkages.We have mixed three herb varieties that extracting them via hot water extraction.
As AGEs, which are formed of bound saccharides and proteins, cannot return to their previous state, they must be metabolised to prevent the effects of glycative stress.Satonaceil is a new anti-aging material made with a focus on aggressive anti-glycation effects.

Seeking Out the Most Effective Balance Of AGEs Metabolism Acceleration Effects and Cross-Linking Cleavage Effects*1

Anti-Glycation Effect (1) Acceleration of AGEs Metabolic Turnover

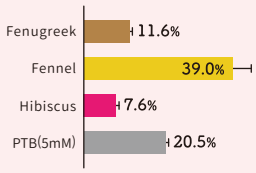
Satonaceil enhances the activity of OPH (oxidized protein hydrolase), an enzyme that degrades glycated proteins and accelerates the metabolic turnover of AGEs in the human body.Every herb contained in Satonaceil showed strong OPH activity-enhancing effects.



Ratio of enhanced activity of enzymes that degrade glycated proteins

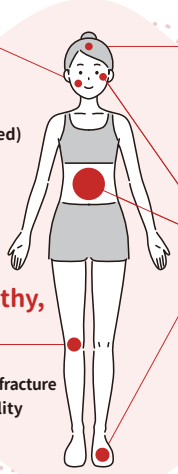
Anti-Glycation Effect (2) Breakage of AGEs Cross-Linking

When proteins such as collagen are glycated, cross-links are formed by AGEs.Satonaceil has a AGEs cross-link cleaving function, and is expected to promote collagenous regeneration and similar such effects.



AGEs cross-link cleavage rate (%)

Diseases and Symptoms of Aging Caused by Glycation



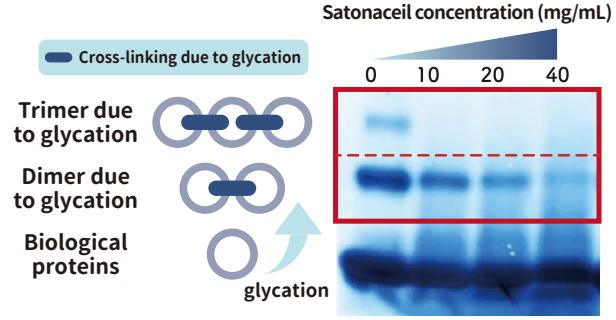
Aging skin
- Decreased resilience and elasticity
- Dullness(yellow-toned)
- Uneven skin texture
- Increased wrinkles
- Outbreaks of spots

Alzheimer's disease
- Accelerated formation of senile plaques in the brain (aggregation of amyloid beta protein)

Diabetic complications
- Nerve disorders
- Retinopathy
- Nephropathy

Osteoarthropathy, osteoporosis
- Bone fragility
- Increased risk of bone fracture
- Decreased bone quality

Studies of Cleaving Cross-Links Using Bioproteins



Reduced amounts of glycated polymers in biological proteins where glycation reactions had occurred and the proteins had formed cross-links.This indicates that Satonaceil has a AGEs cross-link cleaving effect.

Functionality

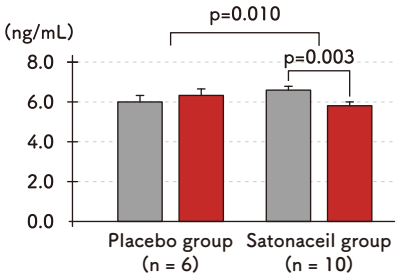
Anti-glycation, anti-aging, improvement of skin quality, wrinkles, elasticity/color unevenness and brown spots, improvement of liver function and metabolisation of glucose.

Patent and Trademark

- Patent No. 7007813
  Oxidized protein degrading enzyme activity enhancer and glycation stress inhibitor
- Satonacei™ is a registered brand by ARKRAY, Inc.

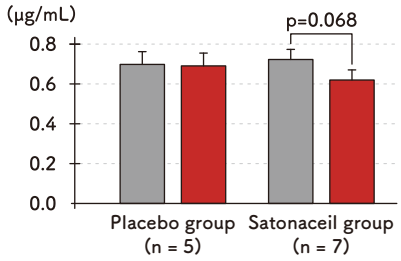
AGEs in blood *2

Pentosidine (< Ave. group)



A significant decrease was observed in the Satonaceil group before and after ingestion. It was significantly lowered even in comparison to the placebo group.

CML (BMI ≥ 22.0 group)



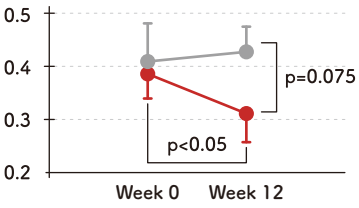
There was no change in the placebo group, but the Satonaceil group showed a decreasing trend before and after ingestion.

【Ingesting 100 mg/day】
Before ingestion
After Week 12
mean +/- SEM
Intragroup: Dunnett's multiple comparison test
Between groups: two sample t-test

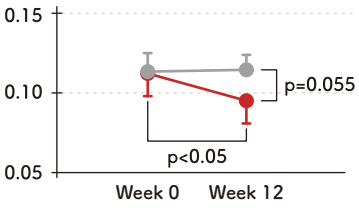
Double-blind, parallel-group, comparative study

Wrinkles, texture, color unevenness, brown spots (VISIA image-analysis) *2

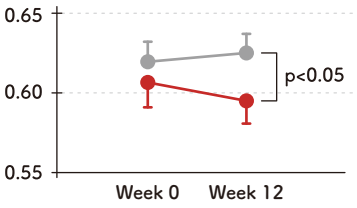
Wrinkles (All Subjects)



Skin Texture, Color Unevenness (All Subjects)



Brown Spots (All Subjects)



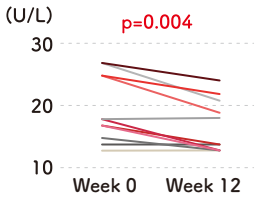
【Ingesting 100 mg/day】
Placebo group (n = 16)
Satonaceil group (n = 19)
mean +/- SEM
Intragroup: Dunnett's multiple comparison test
Between groups: two sample t-test

Double-blind, parallel-group, comparative study

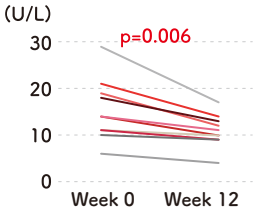
Significant improvements in wrinkles, skin texture and color unevenness were observed in the Satonaceil group before and after ingestion and a trend of improvement was evident in comparison to the placebo group.
Brown spots were also improved in the Satonaceil group in comparison to the placebo group.

Hepatic function / glycometabolism *3

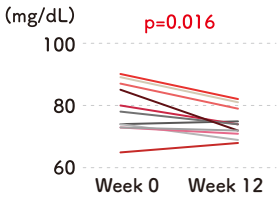
AST(GOT)



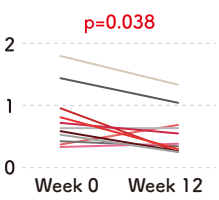
ALT(GPT)



Fasting blood glucose



HOMA-IR



【Ingesting 300 mg/day】
t-test (Bonferroni)

Hepatic function (AST, ALT) and glucose metabolism (fasting blood glucose, HOMA-IR) improved significantly before and after ingestion.

Product Specifications		
	Properties	Powder, pale-brown to brown in color, with a distinctive extract smell
	Loss on drying	8 % or less
	Arsenic	2 ppm or less
	Heavy metals	20 ppm or less
	Total viable count	3,000 cfu/g or less
	Fungus count	300 cfu/g or less
	Coliforms	Negative
Storage conditions	Sealed and stored at room temperature	
Packing	1 kg (aluminum bag)	

Product Appearance

Recommended daily intake	100-300 mg/day
Ingredients	Hot water extract powder of three types of herbs (including dextrin) ・Fenugreek seeds (*Trigonella foenum-graecum*) ・Fennel seeds (*Foeniculum vulgare*) ・Hibiscus (*Hibiscus sabdariffa*) calyx and bracts
Example of Use	Supplements, health foods, etc.
Example of Labeling	Mixed herb extract (dextrin, fenugreek, fennel and hibiscus)

● References
＊1…Kawai H *et al. Glycative Stress Res.* 2021, 8(1), 39-44.
＊2…Matsuo N *et al. Glycative Stress Res.* 2021, 8(2), 98-109.
＊3…Yuasa E *et al. Glycative Stress Res.* 2021, 8(2), 87-97.

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