



Cudrania Silk Worm Fibroin Peptide (CSFP) is a powder material that hydrolyzed silkworms raised by feeding *cudrania tricuspidata* leaves. Studies have confirmed that CSFP is an excellent dietary material for **brain health(improve memory), motor function, and blood sugar level improvement.**

Compared to mulberry leaf silkworms, it is characterized by a high content of fibroin protein, 1-DNJ, GABA and antioxidants. In particular, **the ratio of BCAA also has an ideal composition of 4:1:1.** CSFP can be used in various products due to its excellent applicability and processability, including solubility.

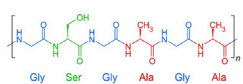
According to traditional Eastern medical texts such as the Compendium of Materia Medica (Bencao Gangmu), silkworms (*Bombyx mori*) have been used to treat diabetes and a condition known as "Xiao Ke" (literally "**wasting and thirsting**"), which closely resembles **modern-day diabetes.** Likewise, *Cudrania tricuspidata* leaves have also been widely used in traditional folk remedies. Recent scientific research has supported these traditional claims, demonstrating that both silkworms and *Cudrania tricuspidata* leaves have **strong blood sugar-lowering effects** and **significant antioxidant activity.**



CSFP

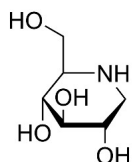
CUDRANIA SILKWORM FIBROIN PEPTIDE

Fibroin Peptide



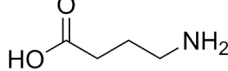
Glycine, Serine, Alanine etc.
(≥ 10,000 ppm)

1-Deoxynojirimycin



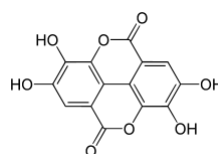
1-DNJ
(≥ 800 ppm)

GABA



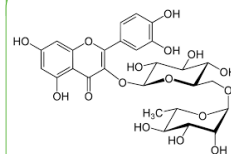
GABA
(> 50 ppm)

Anti-oxidant



Total Polyphenol (> 20,000 ppm)
Total Flavonoids (> 200 ppm)

Rutin



Rutin
(> 10 ppm)

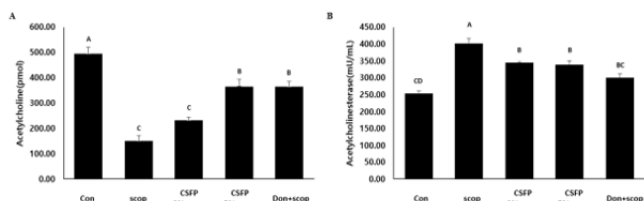
Features of CSFP™

- Savory Scent, No Unique Taste of Hydrolysate.
- Ideal Proportion of Amino Acids with High Absorption.
- Confirmed the Functionality of Improving Brain Health, Blood Sugar Improvement, and Exercise Ability.
- Excellent Processability.
- Various Applications Such as Functional Foods and Food for Elderly, etc.

CSFP: Supporting the Recovery of Cognitive Function

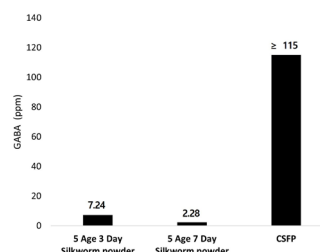
A: Acetylcholine concentration

B: Acetylcholinesterase activity



CSFP stands out with significantly higher levels of GABA compared to similar products

- GABA: a vital neurotransmitter for brain function -



- **Origin of Material** : Republic of Korea
- **Composition** : Silkworm Extract (Solid 100%) 60%, Dextrin 40%
- **Solubility** : Slightly dissolved in water
- **Packing** : 1 kg in a aluminum pouch

Item of Test		Limits of Test	Result of Test
Apperance		Brightly brown powder	Brightly brown powder
Odor		Characteristic	Conforms
Moisture		≤ 5%	Conforms
pH (10% Solution)		5.1 ~ 5.5	Conforms
Protein		> 5%	Conforms
Fat		< 6%	Conforms
Ash		< 9%	Conforms
Total Plate Counts		< 3,000 CFU/g	Conforms
Coliform		Negative	Absent
Yeast / Mold		< 100 CFU/g	Conforms
Fibroin	Glycine	> 1,000 mg/kg	Conforms
	Alanine	> 2,500 mg/kg	Conforms
	Serine	> 2,000 mg/kg	Conforms
BCAA	Leucine	> 3,000 mg/kg	Conforms
	Isoleucine	> 500 mg/kg	Conforms
	Valine	> 800 mg/kg	Conforms
Other amino acids		Please refer to the technical data sheet.	
Conclusion		Conform with specification	
Storage		Store in a dry and cool place, avoid strong light exposure	
Shelf life		Suitable storage conditions. The effective use period is 2 years	

01



Excellent antioxidant activity

02



Benefits brain function,
motor coordination, and
blood sugar control

03



Eco-friendly production
method of nutricare

04



Strict quality control



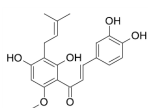
Hops (*Humulus lupulus* L.) have been also used in traditional medicine mainly to treat sleep disturbances and in brewing industry to increase the bitterness and aroma. The traditional use of Hops for the relief of mild **symptoms of mental stress and insomnia** was also reported by the Committee on Herbal Medicinal Products (HMPC) of the European Medicines Agency (EMA). Furthermore, the German Commission E and European Scientific Cooperative on Phytotherapy approved hops for the **treatment of excitability, sleep disturbances, and others**.

Indeed, hops present numerous benefits for **human health due to their antibacterial, antifungal, cardioprotective, antioxidant, anti-inflammatory, anticarcinogenic, and antiviral bioactivities**. The secondary metabolites of the hop cones can be divided into three groups: (1) the hop polyphenols, (2) the hop resins, and (3) the hop oil.

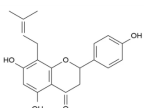
NHCK-HOP HOP EXTRACT

Polyphenols

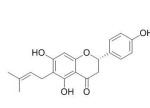
Flavonoids (0.5-1.5% of dried hop), Proanthocyanidins, Phenolic acids etc.
 · Xanthohumol : ≥ 1.5 mg/g
 · Total Polyphenol : ≥ 30 mg/g (TAE)
 · Total Flavonoid : ≥ 4 mg/g (QE)



Xanthohumol
(≥ 1.5 mg/g)

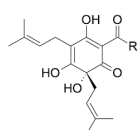


8-prenylnaringenin

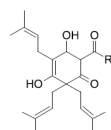


6-prenylnaringenin

Resins (Bitter acids)



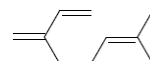
α -acids
(≥ 25 mg/g)



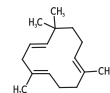
β -acids
(≥ 25 mg/g)

Essential oil

Essential oil : 0.5-1.5% of dried hop



Myrcene (monoterpene)

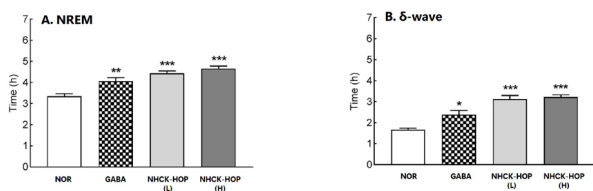


Humulene (Sesquiterpenes)

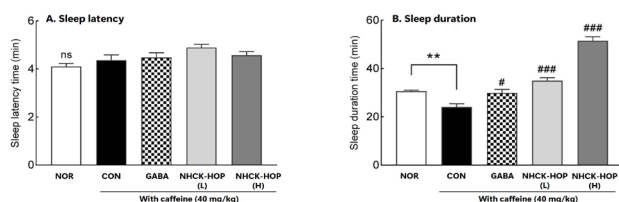
Features of NHCK-HOP™

- NHCK-HOP™ is manufactured with carefully selected hops which are grown and harvested exclusively in Hongcheon, Gangwon Province. These hops are Korean native variety.
- Our product is extracted with fresh dried hops and don't use hop pellets.
- NHCK-HOP™ contains various active ingredients of hops, such as bitter acids and polyphenols.
- The extraction process of NHCK-HOP™ has been standardized by analyzing xanthohumol (XN) using HPLC.
- We are developing NHCK-HOP™ as a functional ingredient to improve sleep quality.

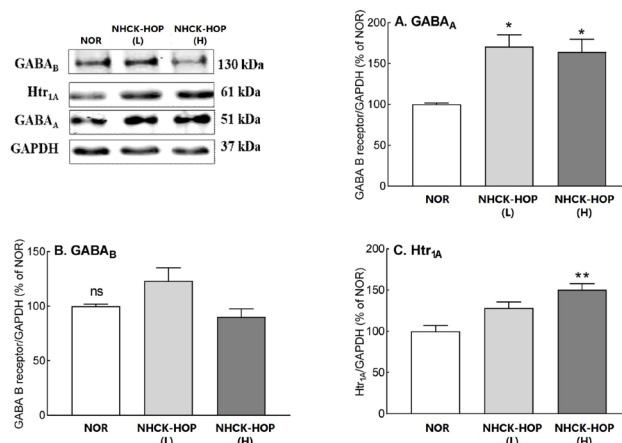
Enhance deep sleep (NREM) by increasing δ -wave activity



Help improve sleep—even in caffeine-induced insomnia



Enhances sleep by increasing brain GABA and serotonin levels



- **Origin of Material** : Republic of Korea
- **Composition** : Hop Extract (Solid 5%) 93%, Dextrin 7%
- **Solubility** : Slightly dissolved in water
- **Packing** : 1 kg in a aluminum pouch

Item of Test		Limits of Test	Result of Test
Apperance		Brightly brown powder	Brightly brown powder
Odor		Characteristic	Conforms
Moisture		≤ 5%	2.95%
Heavy Metals	Pb	≤ 0.5 ppm	Conforms
	As	≤ 0.5 ppm	Conforms
	Cd	≤ 0.1 ppm	Conforms
	Hg	≤ 0.1 ppm	Conforms
E. Coli		Negative	Absent
Total Aflatoxins		Negative	Conforms
Conclusion		Conform with specification	
Storage		Store in a dry and cool place, avoid strong light exposure	
Shelf life		Suitable storage conditions. The effective use period is 2 years	

01


Excellent anti-oxidant activity

02


Sleep-promoting effect

03


Extracted from minimally processed fresh hops

04


Validated in-house analysis methods and strict quality control

Asparagus Extract | *Asparagus officinalis*



Aerial parts Extract

Function



- **Promotes healthy sleep**

- Tryptophan is an amino acid that the body converts into serotonin, a neurotransmitter that plays a key role in regulating sleep.
- Contains melatonin, a hormone that regulates sleep-wake cycles.



- **Relieve stress**

- **Brain function improvement**

- A good source of vitamin K and folate (vitamin B9), which has been linked to improved memory and cognitive function.

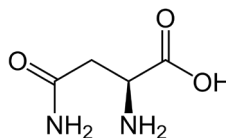


- **Healthy blood pressure and blood sugar levels**

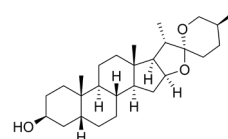
- **Anti-oxidant and anti-aging**

Include of

Asparagine



Sarsasapogenin



Kwanso Extract | *Hemerocallis fulva*



Flower Bud Extract

Function



- **Promotes healthy sleep**

- Oxypinnatanine-A in Kwanso that contribute to its sleep-enhancing effects.



- **Relieve anxiety and depression**

- Regulation of the serotonergic system. Antidepressant-like effects through the blockage of MAO and elevation of synaptic neurotransmitter levels.

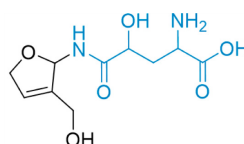


- **Anti-inflammatory**

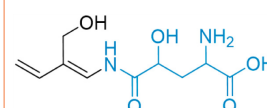
- **Anti-oxidant and liver protection**

Include of 4-hydroxyglutamine derivatives

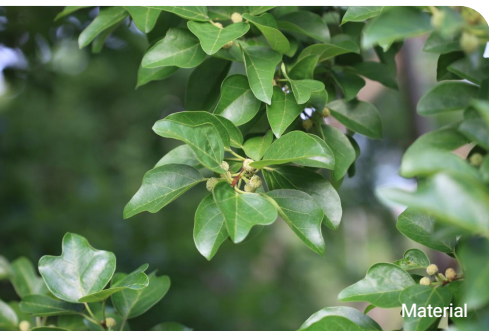
Oxypinnatanine



Pinnatanine



Cudrania Leaves and Fruits Extract | *Cudrania tricuspidata*



Material



Processed material

Leaves Extract



Material



Processed material

Fruits Extract

Function



• Reduce stomach discomfort

- Inhibit the histamine H2 receptor (H2R), which plays a key role in regulating gastric acid production.
- Protect the stomach lining (mucosa) : increase the production of gastric mucins, which act as a protective barrier.



• Brain function improvement

- GABA: Neurotransmitter that plays a crucial role in brain activity and cell metabolism.
- Rutin: Beneficial effects on blood vessel health, which is important for optimal brain function.



• Anti-inflammatory

- Cudraticusxanthone (CTX) : inhibit COX-2 and iNOS, enzymes that play key roles in inflammatory processes(The production of inflammatory mediators, such as prostaglandins, which promote inflammation and pain).

• Boost immune system

• Anti-oxidant

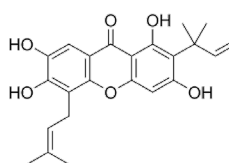


• Losing weight

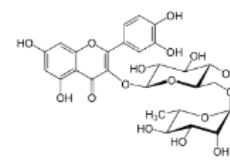
- Significant reductions in body weight and fat mass, including abdominal and liver fat, were observed in mice fed a high-fat diet.

Include of

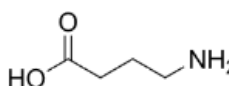
Cudraxanthone



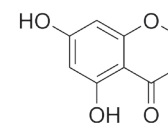
Rutin



γ-aminobutyric acid (GABA)



5,7-Dihydroxychromone



Material



Processed material (1), (2)



Extract & Dry



Dry & Crush

NCSN™ is made from the root of *Codonopsis lanceolata*, known as Deodeok. We offer two types:

“Dry & Crush” Powder: retains the benefits of the whole root while improving processability.

“Extract & Dry” Powder: enhances the health effects of Deodeok through extraction and drying.

Deodeok has been a beloved food in Korea since the Goguryeo and Baekje dynasties, once enjoyed daily in royal courts. Traditionally, it has been known to **strengthen the stomach, lungs, spleen, and kidneys**. Rich in **saponins, dietary fiber, polyphenols, flavonoids, and minerals**, Deodeok is a powerful functional ingredient for promoting overall health.

Its slightly bitter taste and distinctive aroma may vary by cultivation region. We use only **high-quality Deodeok grown in the clean regions of Hoengseong-gun, Gangwon-do**, ensuring excellent flavor and fragrance in our raw materials.

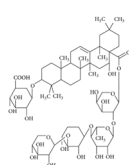
NCSN™

Codonopsis lanceolata

**Features of
Deodeok Powder**

- For enhanced functional benefits, choose “Extract & Dry”.
- For the full aroma of Deodeok, choose “Dry & Crush”.
- Made from 4–6-year-old Deodeok, offering rich flavor and aroma.
- Excellent processability for various applications.
- Supports stamina and vitality, protects the lungs and bronchial tube.

Saponin



Lancemaside
(> 0.5 mg/g)

Effect

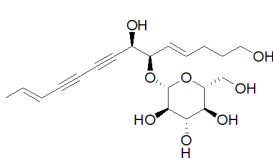


Protects the lungs and bronchial tube.
(Helps relieve cough, phlegm, and asthma symptoms)



Supports liver function

Alkaloid



Lobetyolin
(> 0.1 mg/g)

Effect

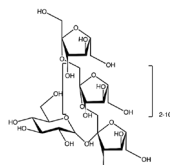


Cognitive-enhancing effect



Brain Health

Polysaccharide



Fiber
(> 6.4% of total weight)

Effect

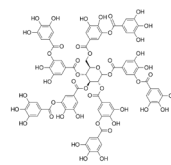


Supports healthy digestion and relieves constipation.



Prebiotics (Inulin etc.)

Antioxidant



Flavonoids, Polyphenols
(> 50 ug/g)

Effect



Alleviates and inhibits inflammation



Supports immune health

- **Origin of Material** : Republic of Korea
- **Composition** : Deodeok extract, Dextrin
- **Solubility** : Slightly dissolved in water
- **Packing** : 1 kg in a aluminum pouch

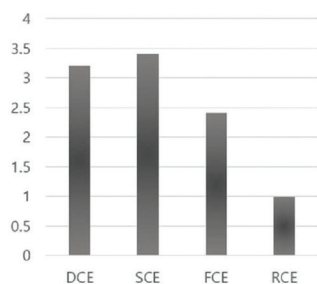
Item of Test	Limits of Test	Result of Test
Apperance	Brown powder	Brown powder
Odor	Characteristic	Conforms
Moisture	≤ 8%	Conforms
E.coli	Negative	Absent
Total Aflatoxins	Negative	Absent
Conclusion	Conform with specification	
Storage	Store in a dry and cool place, avoid strong light exposure	
Shelf life	Suitable storage conditions. The effective use period is 2 years	

Patent Application Number 10-2023-0004161

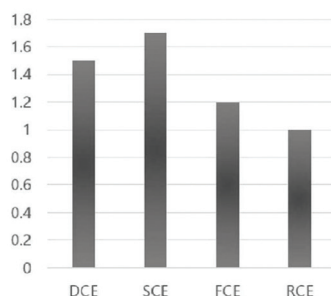
Composition for anti-oxidation, anti-inflammation and memory improvement comprising pretreated deodeok extract

Enhance memory and cognitive function

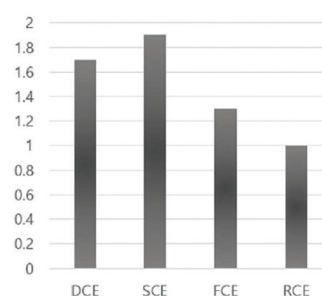
A. DNA protective activity (INDEX)



B. Land maze test (INDEX)



C. Water maze test (INDEX)



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