

Do you often forget your stuff?

Can you hardly remember things to do?

No one can be free from cognitive decline. So, we have to prepare for it in advance. Cognitive decline is no longer a phenomenon that only the elderly experience, but it can happen to anyone. "**Angelica gigas Nakai extract powder (Nutragen)**" recognized as a functional food ingredient that can help improve cognitive functions degraded by aging.

"HELP IMPROVE CONGNITIVE ABILITY DEGRATED BY AGING" daily intake 800mg

Nutragen Co., Ltd. recruited 299 senior citizens who show impaired memory, and conducted a human application test at the Samsung Medical Center for 12 weeks. As the result, the Ministry of Food and Drug Safety recognized Angelica gigas Nakai extract powder (Nutragen) as a functional food ingredient that can **help improve cognitive decline caused by aging**.

Whenever going up and down to the stairs, and standing up and down, my knee joints always bother me!

"HELP IMPROVE A JOINT HEALTH" daily intake 1000mg

The Clinical Trail Center of Jeonbuk National University conducted a functional and safety comparison human application test of 85 people with 1000mg of Angelica gigas Nakai extract powder (Nutragen) per day based on daily intake, and it was recognized that it can **help improve a joint health** by the Ministry of Food and Drug Safety on November 26th, 2015.

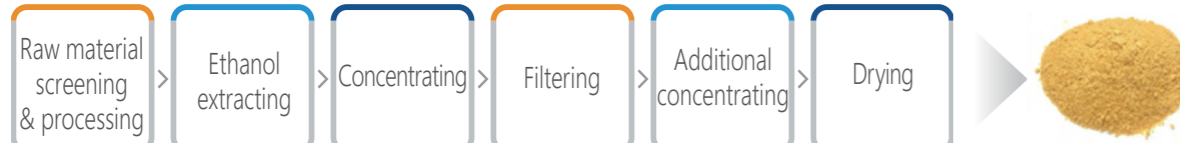


What is Decursin as a potent material that is being in Angelica gigas?

It is one of the indicator of Amgelica Gigas as root vegetables, which have been widely used for humans since ancient times. Nutragen produces this product with **100% domestic Angelica gigas** through our outstanding **extraction method (AGEE method)**.

High Concentrations of Decursin Extract and Powder

Angelica gigas Nakai extract powder (Nutragen) is made with 100% domestic angelica gigas selected carefully, and is high concentration decursin is produced through the exceptional manufacturing process.

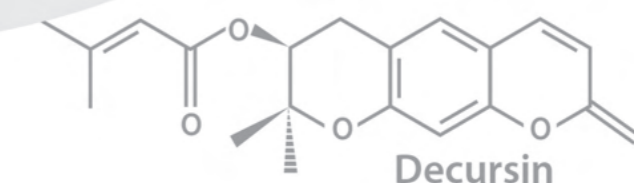


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Nutragen Extract Powder

Individual Recognized Health Functional Food Functional Raw Material
(No. 2014-44)



Nutragen

Human Application Test Results of Angelica Gigas Extract Powder Containing Decursin



Cognitive Function

Target of Subject	Men and women aged 51 to 70 with memory impairment (n=299)
Selection of Subject	Persons with K-MMSE score of 25 or higher and with reduced cognitive function from a 7-minute test were selected(n=107)
Test Type	Double-blind, randomized, placebo-controlled trial
Block Grouping	An administered group are made randomly after dividing blocks by K-MMSE score, age, gender, Blocks are divided into placebo groups
Test Period	12-week dose: 800 mg/day
Test Result	Significant improvements in ADAS-Coq (Cognitive Assessment Scale Index) and GDS (Elderly Depression Scale) compared to the control groups

Human Application Testing Institution: Samsung Medical Center
Test Director: Dr. Kim Do-Kwan of Neurology

Feature

- This product can help with reduced cognitive functions by aging. (the Ministry of Food and Drug Safety's Functional raw material Recognition No. 2014-44)
- It can help improvement in brain health.
- It is recommended for those who are suffering from memory loss.
- It is recommended for those who have often forgotten something.
- It is recommended for those who want to improve their cognitive function.
- It is recommended for those who want to improve brain health.

Intake Subject

- 1) For those who need to improve a cognitive function by aging.
- 2) For those who keep forgetting things as they get older.
- 3) For those exposed to an environment where brain function can be degraded resulting from stress and excessive instant food intake.
- 4) For those who want to prepare for cognitive slippage by aging in advance.
- 5) An office worker who keeps missing important tasks.
- 6) For those who can hardly remember what just heard.
- 7) For those who can hardly think of an accurate expression when talking with others.
- 8) For those who feel cognitive slippage after giving birth.
- 9) A housewife who has often forgotten where she left stuff.
- 10) For those who feel their brain activity is getting worse.
- 11) A person who wants to keep having a happy life with his or her families by preventing cognitive slippage in advance.

Human application test results are not the same applied to everyone

Joint Function



Target of Subject	Men and women over 35 years of age, men and women under 80 years of age (n=85)
Selection of Subject	Those with stable bone joints, and those who recorded pain VAS result of 30mm or higher from a screening test (n=79)
Test Type	Double-blind, randomized, placebo-controlled trial
Test Period	8 weeks dose 1000 mg/day
Test Result	VAS scale The placebo group and the dosing group recorded significant improvement of the VAS index after the test (before: 53.36/ after: 44.86) and (before: 53.36/after: 34.15), respectively [*VAS(Arthrodynia Index): Visual Analogue Scale]
Human Application Testing Institution: Functional Food Testing Support Center, Jeonbuk National University Hospital Test Director: Professor Ryu Wan-hee, Department of pathology and internal medicine at Jeonbuk National University Hospital	WOMAC score The placebo group and the dosing group recorded significant improvement of the WOMAS index compared to the control group after the test (before: 30.75 / after 21.54) and (before: 34.08/ after: 21.54), respectively [* WOMAC (Included-Pain Daily Performance Capability Test): Western Ontario and McMaster Universities Aristry Index]

Human Adaptation Test Results of for 8 Weeks of Angelica Gigas Extraction Powder

■ The 1st Validity Assessment - The change of VAS scale before intake and after intake for 8 weeks

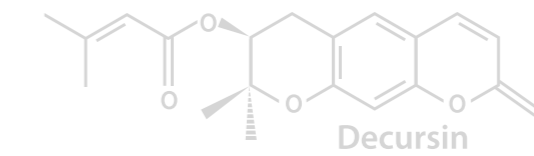
Group for intake of Angelica Gigas Extraction (n=39)				Group for intake of Placebo (n=37)			
0 week (Baseline)	8 weeks	Change value	p-value	0 week (Baseline)	8 weeks	Change value	p-value
53,36±7,08	34,15±19,00	-20,33±19,71	< .0001	53,65±9,47	44,86±16,90	-10,59±20,00	< .0001

■ The 2nd Validity Assessment - The change of WOMAC score before intake and after intake for 8 weeks

Group for intake of Angelica Gigas Extraction (n=39)				Group for intake of Placebo (n=37)			
0 week (Baseline)	8 weeks	Change value	p-value	0 week (Baseline)	0 weeks	Change value	p-value
34,08±10,38	21,54±13,04	-12,54±10,76	< .0001	30,70±10,43	25,16±10,23	-5,54±10,00	0,0001

Intake Subject

- 1) For those who are concerned about discomfort in knee joints.
- 2) For those who are worried about discomfort in waist joints.
- 3) For those who are worried about discomfort in shoulder joints.
- 4) For those who are concerned about discomfort in hand joints.
- 5) For those who are bothered by knee joints when sitting down and standing up.
- 6) For those who are bothered by knee joints when going up and down stairs.
- 7) For those who are having trouble with going up and down stairs or the steep slope.
- 8) Those who have problems with joint health by aging.
- 9) Those who frequently go to climbs, marathons, etc. that overuse joint.
- 10) Athletes who have to overuse joints and those who exercise a lot.
- 11) Those who usually do extreme exercise or physical work.
- 12) Those who usually do desk work.
- 13) Women with Joint discomfort due to giving birth, housework, and childcare.
- 14) Middle-aged and elderly people who are needed joint health care.



Good Supporter For Your Health **Nutrigen**

Health Information



What is cognitive ability?

Cognitive ability represents the ability to discern and perceive things. Maintaining cognitive ability is referred to as a normal function of brain by controlling various factors that can impair memory or concentration.

Why is cognitive improvement important?

The outer part of the cerebrum consists of deep wrinkles where there are many nerve cells. Nerve cells make a network of contacts to send signals to each other so that they can control judgment, sensibility, and create energy for brain activities in an instant. Therefore, if nerve cells are damaged, normal brain function is not available. In particular, brain cells, unlike other cells, are known to not be regenerated once damaged. Therefore, it is important to maintain healthy brain cells.

What causes a decline in cognitive ability?

Brain cells begin to decline when people are over aged 30. Continuous stress and tension can promote fatigue in brain cells, reducing work efficiency and psychological factors such as depression and nervousness can also reduce perceptiveness. In addition, physical fatigue, lack of sleep, drugs and mental stimulants, and excessive alcohol consumption can worsen cognitive activity, which can bring brain atrophy and brain nerve cell destruction that leads to memory disorders.

What are a general way to improve cognitive ability?

Human brain cells begin to decline as they age, so the functions of memory and concentration that decreasing can be a natural feature of aging. Fortunately, however, it is known that it is possible to slow a decline in cognitive activity by reducing the factors responsible for brain cell damage while providing enough oxygen and nutrients for normal brain activity. Therefore, it is recommended to take sufficient nutrition and avoid stress, excessive alcohol consumption, drugs, and mental stimulants.

- It can help maintain cognitive ability by controlling harmful substances.
- It can help improve decreased cognitive ability by controlling neurotransmitters in the brain.
- It can help improve maintain a brain function as a component of the brain neurons or substances needed for brain function.

<Source> Information by health functional food information function" in Food Safety Korea homepage.

+ What is degenerative arthritis

Degenerative arthritis is a condition in which bones under the cartilage are exposed, and inflammation of synovium around joints occurs due to wear and tear of the cartilage substrate that makes up the joint cartilage. Women show about two to three times higher incidence rate than men, especially in women after their middle age!

- + **What causes degenerative arthritis** Causes - Cartilage wear and tear by aging and overuse
Age - Mainly in older people
Body Parts - Knee, waist, hip, fingertip joints

+ Degenerative arthritis progression stage

- Early (Stage 1) - Cartilage wears away so that soft parts in joints gradually disappear, inflammation and pain occur.
- Middle (Stage 2) - As cartilage becomes more worn and bones begin to wear out, bone bumps grow so that a move accompanies with pain.
- Last (Stage 3) - Bone and bone collide directly. Joints are getting stiffened with a severe pain, resulting in swelled joints by synovial fluid.