



Diabetes-alleviating food composition comprising Schisandra and soybean juice, and method for producing same

A composition for the improving of diabetes comprising Schisandra chinese and Soymilk, and method for preparing the same

Patent title	Diabetes-alleviating food composition comprising Schisandra and soybean juice, and method for producing same	Inventor	Korea Food research Institute / Jang Dae-ja
Patent application No.	KR 10-2019-0006086 (2019.01.17)	Authority status	Registered

Technicality

Technology overview

- A new use has been developed by scientifically analyzing the composition and production method of traditional Schisandra chinensis and soybean water, which is effective in relieving thirst.
- The technology is a technology which can be applied as food or health functional food using Schisandra chinensis and soybean juice (soy milk). In particular, the technology can be developed into a special purpose food for diabetic patients and a health functional food for blood sugar control.

Development background and problem to be solved

- Researches on natural materials with excellent blood sugar lowering effects are needed.
- A diabetes-alleviating food composition which has excellent α -glucosidase inhibitory activity and suppresses a postprandial blood glucose rise is provided.
- It is necessary to produce a variety of products which can be developed as special purpose foods for diabetic patients and health foods for blood sugar control.

Excellence and discrimination of technology

Excellence of technology

- An α -glucosidase inhibitory activity is excellent.
- A high blood sugar lowering activity is high.
- An excellent effect in alleviating diabetes is exhibited.

Discrimination of technology

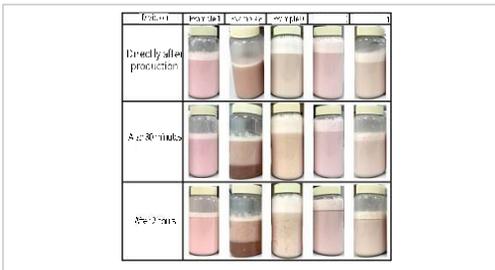
- An inhibitory activity of α -glucosidase related to hypoglycemia is excellent.
- Diabetes can be alleviated by suppressing a postprandial blood sugar rise.
- A food composition for alleviating diabetes can be produced in various forms such as soy milk, processed tofu, and the like.
- The technology is developed into a special purpose food for diabetic patients and a health functional food for blood sugar control.

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Implementation method

- A food composition for alleviating diabetes is obtained by mixing Schisandra chinensis water, soybean juice, and grain saccharides at a weight ratio of 1:0.8 to 2:0.2 to 1.5.
- Included are the steps of: obtaining Schisandra chinensis water; obtaining soybean juice; and mixing the Schisandra chinensis water and the soybean juice.
- Included is a step of mixing malt or saccharification enzymes and grains, saccharizing the same, and then drying the same to obtain grain saccharized materials. During the mixing, grain saccharides are additionally mixed.



Picture Raw saccharized extraction juice + soybean juice + saccharide

Extraction	Schisandra chinensis water (g/ml)	Soybean juice (g/ml)	Grain saccharides (g/ml)	Concentration (g/ml)
Extraction 1	1	1	1	0.03284
Extraction 2	1	1	1	0.03550
Extraction 3	1	1	1	0.03670
Extraction 4	1	1	1	0.03785
Extraction 5	1	1	1	0.03782
Extraction 6	1	1	1	0.03824

Table Concentration of a mixture for the production of a food for alleviating diabetes

Degree of technology completion (TRL)

Degree of technology completion: TRL3 (technology concept verification stage)

TRL1	TRL2	TRL3	TRL4	TRL5	TRL6	TRL7	TRL8	TRL9
Technical principle presentation	Technology concept setting	Technology concept verification	Lab Scale prototype development	Implementation environment application experiment	Full Scale prototype development	Quasi-commercial product development	Commercial product development	Commercial product implementation

Utilization

Utilization field and applied product

Utilization field

- Senior business
- General processed food industry
- Functional food industry



Picture 1 Health functional food
<Data: Huenbio>

Applied product

- Special purpose food
- Retort food
- Functional food



Picture 2 Special purpose food
<Data: Asan medical center>



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Technology trend

- As a part of a treatment regimen for diseases such as malnutrition caused by diseases, an increase in chronic diseases, the aging population, diabetes, Alzheimer's disease, and attention deficit disorder, the importance of medical food for supporting the nutritional needs of patients is growing.
- Care food has been limited to hospitals and nursing homes mainly with some food companies and consignment catering companies, but is expected to expand to the next-generation food business in the food industry.
- Hyundai Green Food has launched twelve types of softening products which can be easily eaten by customers with weak chewing power or teeth problems. The products have undergone a softening process which lowers the hardness of food by an average of 1/5 and up to 1/10 of the same product that has undergone a normal cooking process.

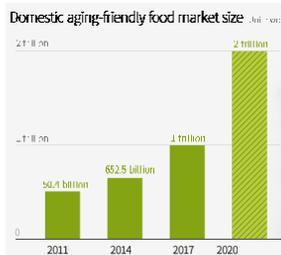
Family patent status

Application nation	Application No. (Application date) / Registration No.	Title of the invention
KOR	KR 10-2019-0006086 (2019.01.17) / KR 10-2061048 (2019.12.24)	Diabetes-alleviating food composition comprising Schisandra and soybean juice, and method for producing same
PCT	WO 2020-149506 (2020.07.23) / -	FOOD COMPOSITION, FOR ALLEVIATING DIABETES, COMPRISING OMIJA AND BEAN JUICE, AND PREPARATION METHOD THEREOF

Market prospect

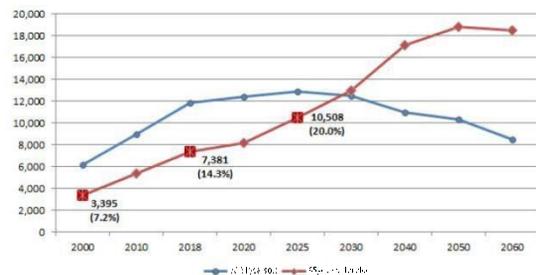
Target market size and prospect

- The size of the domestic aging-friendly food market has doubled from KRW 510.4 billion in 2011 to KRW 1 trillion in 2017, and the market size is expected to reach KRW 2 trillion by 2020.
- In 2019, the population aged 65 years and older accounted for 15.5% of the total population, and in 2025, the proportion of the population aged 65 years and older is expected to account for 20.3% of the total population. Thus, the senior care food market is expected to become more active.



Picture Domestic aging-friendly food market size

<Data: Korea Agro-Fisheries & Food Trade Corporation >



Picture Senior demographic change trend

<Data: Statistics Korea >

Technology transfer query



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Technology transfer process

