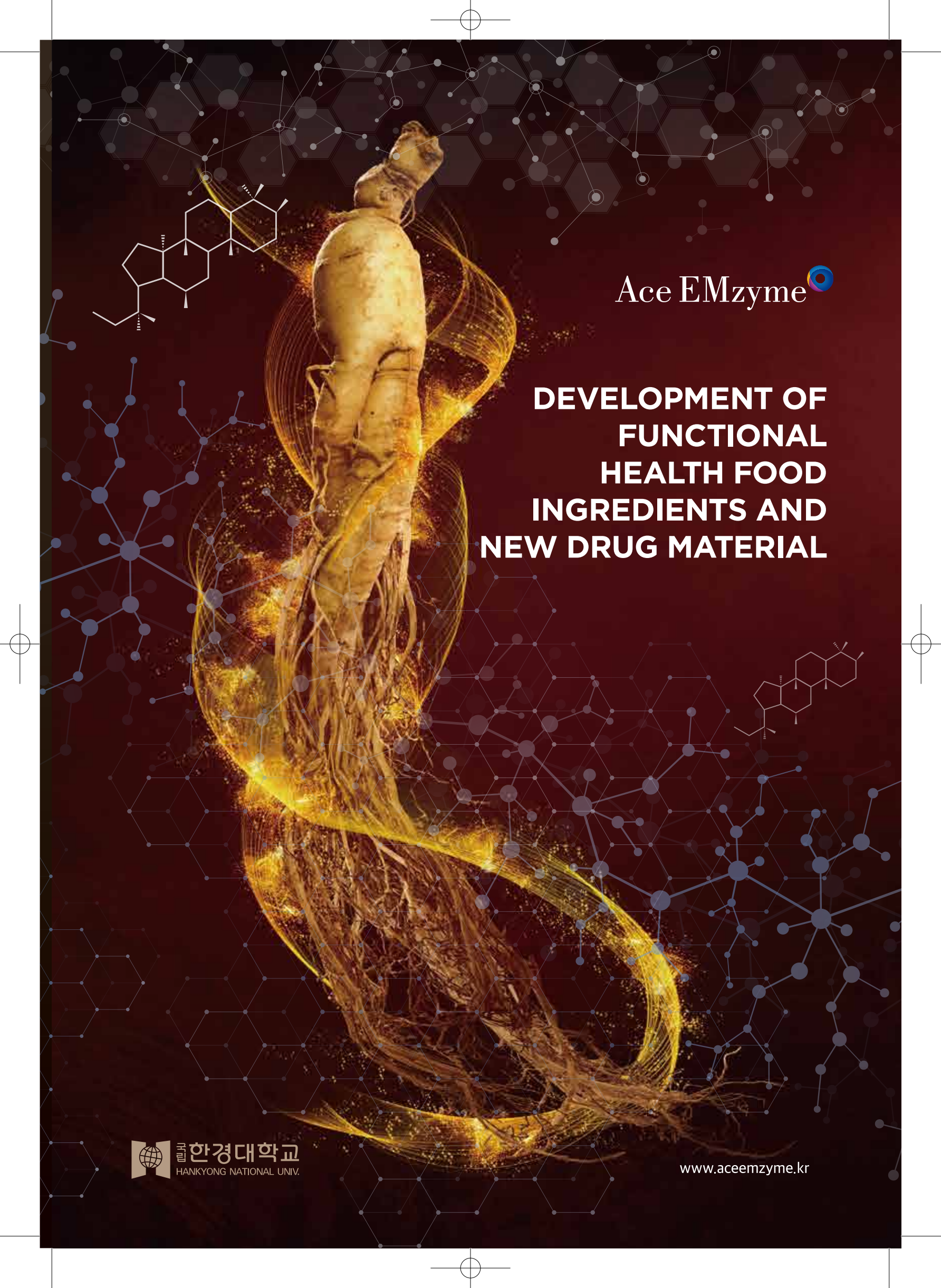




Ace EMzyme 

**DEVELOPMENT OF
FUNCTIONAL
HEALTH FOOD
INGREDIENTS AND
NEW DRUG MATERIAL**

Company Introduction

Ace EMzyme

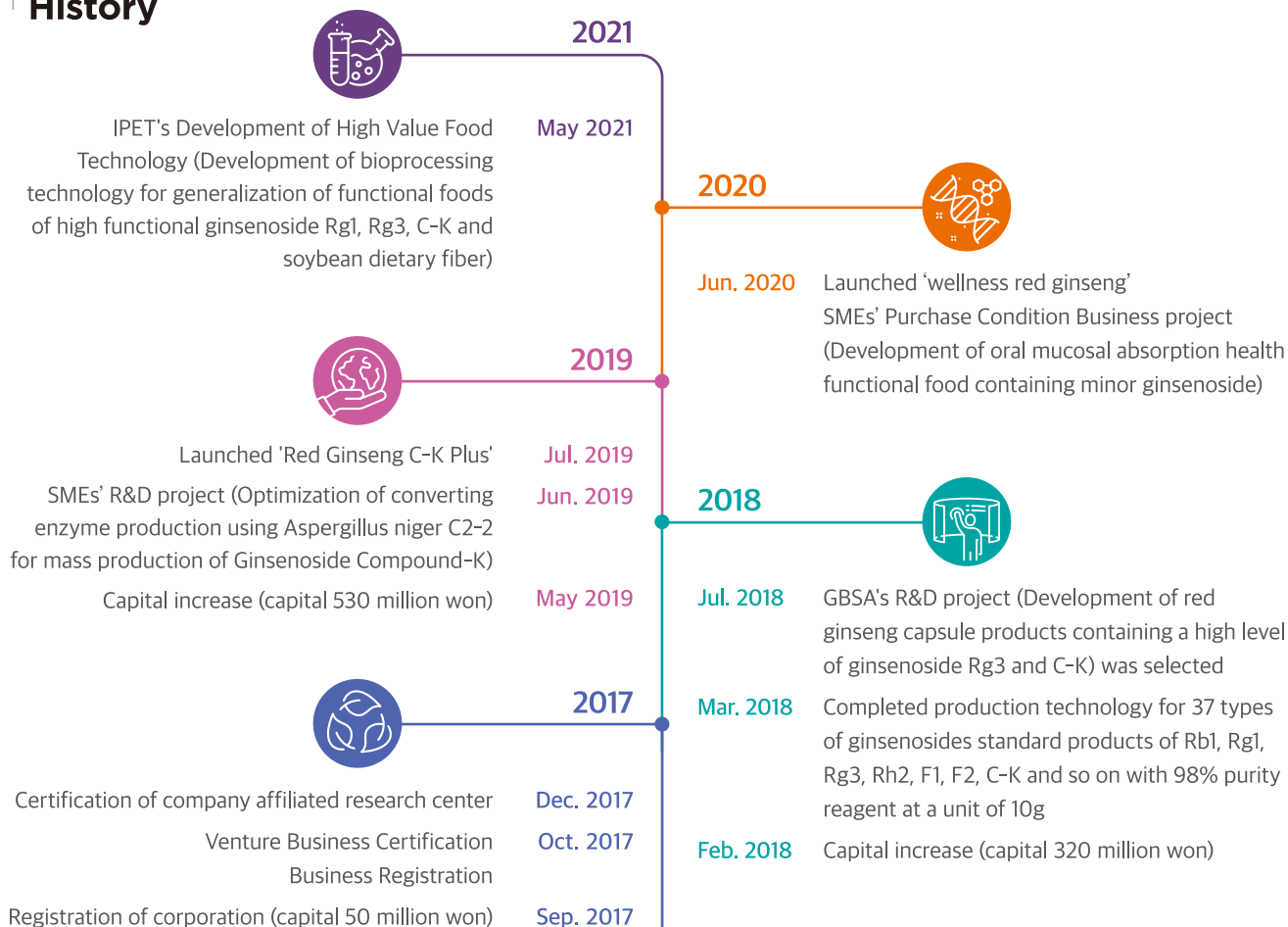
- Ace** - Ace(Best) in the world
- EM** - 1. Development and propagation of effective microorganisms
- 2. Selective development and production of effective metabolites
- zyme** - Fermentation and bioconversion method based on enzyme("zyme")

Ace EMzyme Co., Ltd. is a venture company which develops and produces cosmetic ingredients, health functional food materials, and pharmaceutical materials, agricultural and environmental materials by fermentation and bioconversion methods based on Enzyme to contribute to human health.



Products	Ginsenoside materials and standard products, microbial analysis services, research services, special microbial culture, functional bio material, and fermentation process optimization services
Major business (Standard industry classification)	Research and development industry, reagent manufacturing, ingredients for health supplements, wholesale and retail of health food

History



Laboratory & Factory

Production of red ginseng products (pouches, sticks, capsules), Ginsenoside production at a unit of kg



Patent

What is New Excellent Technology (NeT)?

New Excellent Technology (NeT) is a technical certification granted by the Minister of Trade, Industry and Energy in accordance with Article 15-2 (3) of the Industrial Technology Innovation Promotion Act and Article 18-4 of the Enforcement Decree of the Industrial Technology Innovation Promotion Act. It is designed to explore new technologies developed by domestic companies, research institutes, universities, etc. in the early stage of R&D and certify their excellence. **Ace EMzyme Co., Ltd. has secured the technology to produce enzymes for mass-production of compound K with high absorption efficiency for the human body.**



Category	Name of patent	Related business	Registration No.	Remark
Bacteria	Novel nitrogen-fixing bacteria <i>Cryptococcus podzolicus</i> PGPY and use thereof	Sprout ginseng	10-2005013	Registration
Bacteria	Novel denitrification bacteria <i>Microvirgula aerodenitrificans</i> dN46-6 showing excellent denitrification activity	Environmental purification	10-2097669	Registration
Bacteria	Microorganism preparation for water purification and manufacturing method thereof	Environmental purification	10-2097670	Registration
Ginsenoside	Converting ginsenoside Rb2 to ginsenoside Rd using alpha-arabinopyranosidase from <i>Blastococcus saxobidensis</i>	Ginsenoside raw materials and standard product	10-2095998	Registration
Ginsenoside	Converting ginsenoside Rb3 to ginsenoside Rd using beta-xylosidase from <i>Paenibacillus woosongensis</i>	Ginsenoside raw materials and standard product	10-2140810	Registration
Ginsenoside	Novel <i>Aspergillus niger</i> C2-2 isolated from Nu-ruk producing ginsenoside compound K biotransformation enzyme and use thereof	Compound k converting enzyme	10-2258788	Registration
Ginsenoside	Production of ginsenoside Rd and ginsenoside F2 using novel ginsenoside glycosidase derived from <i>Flavobacterium johnsoniae</i>	Ginsenoside raw materials and standard product	10-1427882	Registration



Patent Number
10-2005013



Patent Number
10-2097669



Patent Number
10-2097670



Patent Number
10-2095998

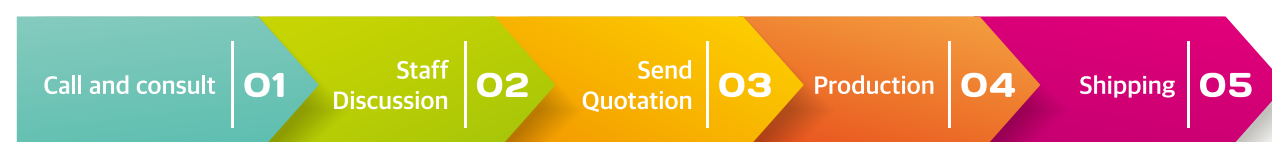


Patent Number
10-214810



Patent Number
10-2258788

Procedure of request

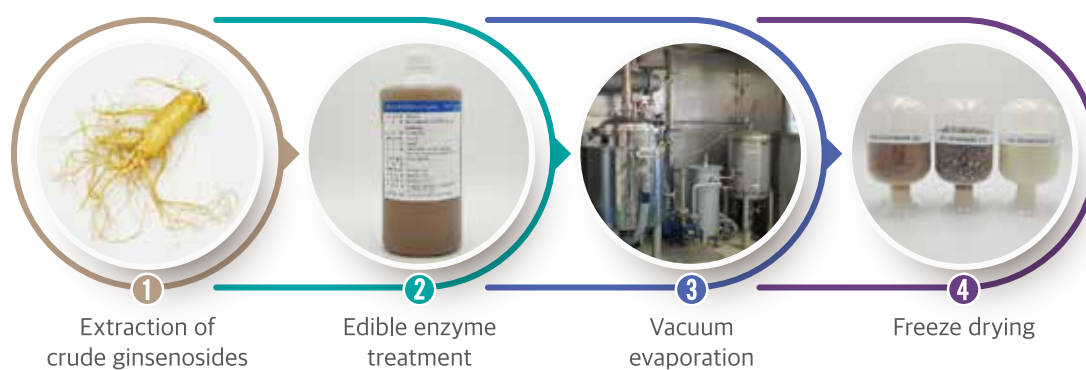


Core technology

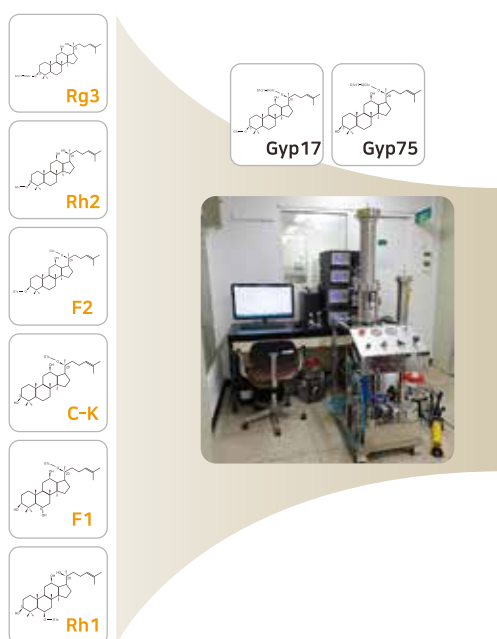
Natural products + Microorganisms
Metabolites efficacy



Manufacture process of AceEMzyme's enzyme treatment for production of C-K



Business items – C-K medicine



Now, these are used as reagents for HPLC standards and efficacy test.



Finally, these high purity ginsenosides can be used for new drug.

Ginsenosides

Natural compounds with the characteristic of Dammarane-type Triterpene Saponin, which shows the main pharmaceutical efficacy of ginseng. They contained 4 to 5 percent in ginseng and classified into two types, major and minor ginsenosides, depending on an amount contained.

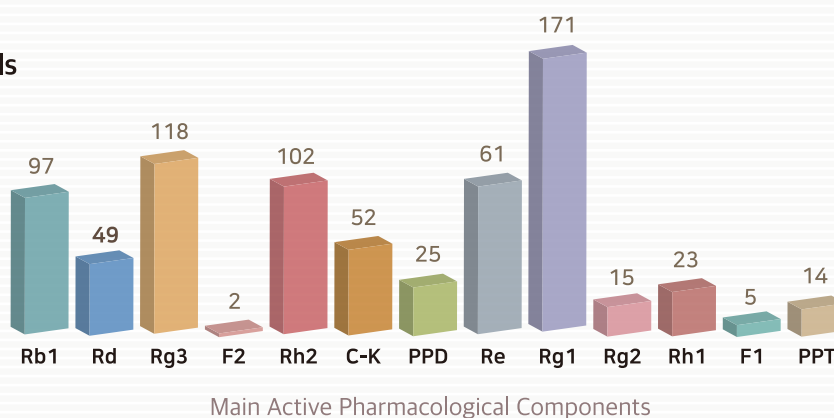
Main effects of active ingredients

- The main efficacy of ginsenosides
 - **Rb1** : Antipyretic and analgesic action, serum protein synthesis promotion action
 - **Rg1** : Immune function enhancement, memory and learning function improvement
 - **Rg3** : Inhibition of cancer cell metastasis, hepato-protective action
 - **Compound K** : Anti-oxidant action, anti-cancer action, immunity enhancement action, liver damage recovery and chronic fatigue recovery
- To enhance the functionality of red ginseng, it increases the minor ginsenoside content and develops absorption products through oral mucous membranes.

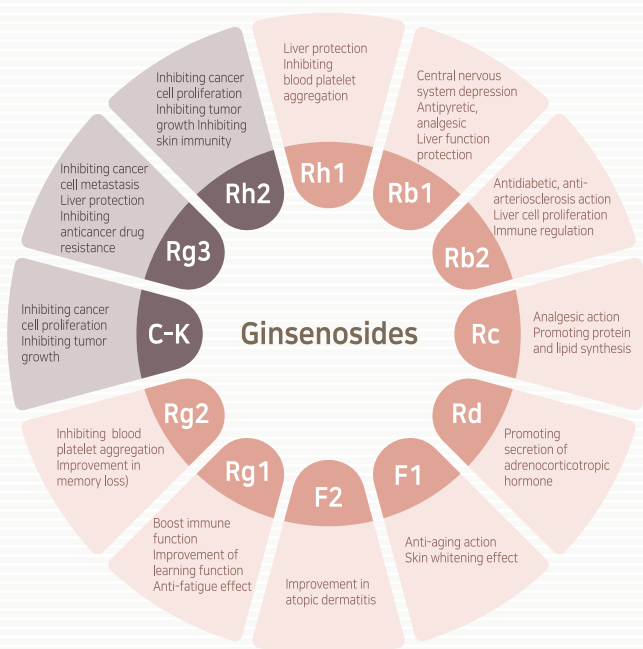
[Health functional food standards]
Rb1 + Rg1 + Rg3

[High Content Minor Ginsenoside]
Rg3 + Rh2 + C-K

Published articles in SCI journals

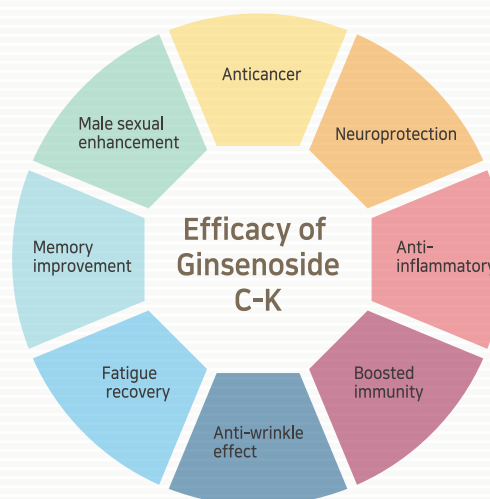


Efficacy of ginsenosides



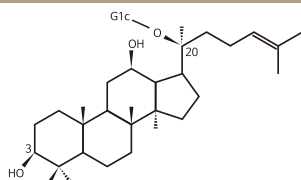
Efficacies of Ginsenoside C-K

C-K is **King** among 100 kinds of ginsenosides.



Ginsenoside ingredient products

Ace Ginsenoside C-K



Price : USD 7,000\$/kg

General Description

Ginsenoside C-K is made by bioconverting ginsenoside Rb1, Rc, and Rd using enzymes and crude ginsenosides mixture extracted from Korean ginseng, American ginseng, and Chinese ginseng. Consumed 10-50 mg/day as food supplement, C-K can give good vitality.

Product characteristics

- Ace Ginsenoside C-K made from enzyme treatment is 35-45% purity (350-450 mg/g).
- Ace C-K includes together ginsenoside F1 (10%) and F2 (5% or less)

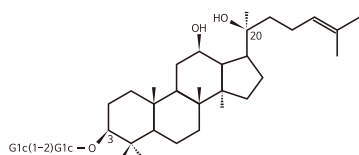
Purpose and use of the product

- Healthy foods or health functional foods that want to enhance immune function.
- Can be easily used as a raw material for capsule products in powder form.
- The raw material itself is expensive, but the actual amount used is effective at more than 10 mg, so it is not so expensive. High efficiency with a small amount.

Product specification 1kg, 2kg, 3kg, 5kg, 10kg, in terms of packaging

Minimum Quantity 1Kg

Ace Ginsenoside Rg3



Price : USD 3,000\$/kg

General Description

Ginsenoside Rg3 is made by converting ginsenoside Rb1, Rb2, Rb3, Rc, and Rd (crude ginsenosides mixture) extracted from Korean ginseng, American ginseng, and Chinese ginseng. Consumed 10-50 mg/day as food supplement, Rg3 can give good vitality.

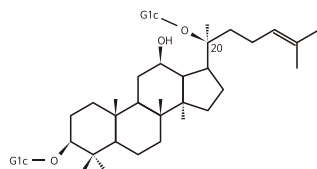
Product characteristics

- Ace Ginsenoside Rg3 made from acid treatment is 15-35% purity (150-350 mg/g).
- Ace Rg3 includes together ginsenosides Rk1, Rg5, Rg2, Rg4 and Rg6 (15% or less).

Purpose and use of the product

- Healthy foods or health functional foods that want to enhance neuro-protection function.
- Can be easily used as a raw material for capsule products in powder form.
- The raw material itself is expensive, but the actual amount used is effective at more than 20 mg, so it is not so expensive. High efficiency with a small amount.

Ace Ginsenoside F2



Price : USD 5,000\$/kg

General Description

Ginsenoside F2 is made by bioconverting ginsenoside Rb1, Rc, and Rd using enzymes and crude ginsenosides mixture extracted from Korean ginseng, American ginseng, and Chinese ginseng. Consumed 10-50mg/day as food supplement, F2 can give good vitality.

Product characteristics

- Ace Ginsenoside F2 made from enzyme treatment is 35-45% purity (350-450 mg/g).
- Ace F2 includes together ginsenoside C-O (5%) and C-K (1% or less).

Purpose and use of the product

- Healthy foods or health functional foods that want to enhance liver function.
- Can be easily used as a raw material for capsule products in powder form.
- The raw material itself is expensive, but the actual amount used is effective at more than 10 mg, so it is not so expensive. High efficiency with a small amount.

Energin K 21



Product specification

65(W) x 65(D) x 90(H)mm
500mg X 60 capsule (30g)

Product characteristics

1. The optimal mixing technology for raw material of medicinal herbs. Perfect harmonization of 5 types of medical herbs (Red Ginseng, Coriolus versicolor, morus bark, dried clove buds, Visci Ramulus et Folium) Red Ginseng ingredient alone is not sufficient. Therefore, we combined medical herb materials to achieve perfect harmony of 5 elements in Oriental Philosophy.
2. In vivo absorption ratio of Red Ginseng is enhanced by enzymatic modification engineering. Ginsenoside ingredient contained in ginseng is hardly absorbed with in the human intestines, requiring breakdown and conversion through enzymatic modification engineering in order to be absorbed. Energin K 21 enhanced in vivo absorption rate of Red Ginseng with cutting edge extraction processing and enzymatic technology to maximize Red Ginseng's function.

Ginsenoside C-K daily intake 10 - 50 mg/day
Ginsenoside Rb1+Rg1+Rg3 intake 3-10 mg/day

Energin K 21 is recommended for these people.

- Those who feel heavy when they wake up in the morning
- Those who with high stress score due to frequent overtime work
- Those who always feel heavy by drinking and smoking a lot
- Those who are interested in diet, skin beauty and health
- Those who had been obtained no healing effect with other red ginseng products
- Those who want to find vitality in life Those who with severe forgetfulness

Wellness Red Ginseng Stick (C-K included)



Product specification

190(W) x 180(D) x 45(H)mm
12g X 30ea (360g)

Product characteristics

One Stick Per Every Morning, A Smart Choice For Smart Brain The optimal mixing technology for raw material of medicinal herbs. In vivo absorption ratio of Red Ginseng is enhanced by enzymatic modification engineering.

Ginsenoside Rg1+Rb1+Rg3 intake 3-10mg/day
Ginsenoside C-K daily intake 0.2 - 2 mg/day

Two Significant Features Of Wellness Red Ginseng Stick

1. The optimal mixing technology for raw material of medicinal herbs. Wellness Red Ginseng Stick achieved harmony of yin and yang by blending Korean ginseng concentrate with 10 medicinal herbs we combined medical herb materials to achieve perfect harmony of 5 elements in Oriental Philosophy.
2. In vivo absorption ratio of Red Ginseng is enhanced by enzymatic modification engineering. Ginsenoside C-K is included.



Ace EMzyme

Head Office

Room 403, Industry-University Cooperation Hall, 327, Jungang-ro,
Anseong-si, Gyeonggi-do, Republic of Korea

R&D Center

Room 301, Center for Animal Husbandry Technology, 327, Jungang-ro,
Anseong-si, Gyeonggi-do, Republic of Korea

Factory

59, Chungjusandan 7-ro, Chungju-si, Chungcheongbuk-do,
Republic of Korea

Tel | +82-31-678-4616 Fax | +82-31-601-6316
Home | www.aceemzyme.kr