

# TIENS Barley Green Tablets

Barley green, a kind of dry powder product made from barley seedlings with a length 20 cm or less, is made by adopting a low temperature break-wall condensation technique and a low temperature spray drying technique, after the seedling has been cleaned and extracted. The concentration multiple is as high as 48:1, i.e. 48 kilograms of barley seedling can only be condensed to around 1 KG of barley green. In addition, all the production processes must be accomplished at the lowest temperature over the shortest period of time, so as to preserve the activity of all the nutriments in the barley seedling (see fig 1).

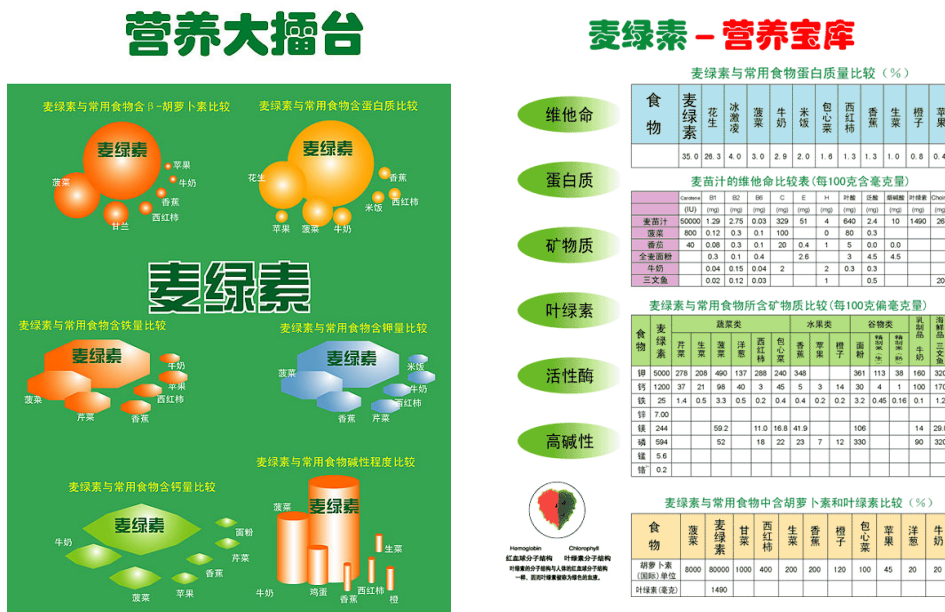


Fig 1 Schematic to the nutriments arena and treasury in barley green

The *Compendium of Materia Medica* states that: “The pungent, cool-natured and innocuous barley seedling is mainly used for relieving alcoholism, cruel heat, alcoholic trance and yellow eyes. If it is pounded and its juice is extracted, it will be able to relieve verm toxins. If it is boiled for its juice, it will be able to get rid of seasonal diseases and cruel-heat, alleviate chest heat, and benefit the small intestines. If it is eaten, it will produce a good complexion.”

## Major physiological functions of Barley green

1. Barley green is a high alkaline food which is able to balance acidic soma in the human body. Acidic soma may lead to poor health or even a state of morbidity. Fortunately, barley green is able to prevent poor health through its ability to balance acidic soma.
2. Assist in lowering the blood sugar. Barley green is a high alkaline food and contains no sugar or fat, and thus, it is able to improve acidic soma for diabetics and offer general active nutrition for them, improve the alimentation overdraw actuality and reinforce the rehabilitation ability of cells. The chromium in barley green is a rare mineral substance, which can stimulate insulin secreting and effectively lower the level of blood sugar. Zinc is able to store insulin in the pancreatic island. The ample SOD enzymes included in barley green are able to cure complications such as blood vessel blockages and arteriosclerosis that are caused by diabetes.
3. Barley green can comprehensively provide nutrition to the body, as it is abundant in many nutriments. It contains a great deal of natural chlorophylls, superoxide dismutase (SOD) and  $\beta$ -carotene, proteins, dietary fibers, 15 kinds of vitamins, 11 kinds of mineral matters, 17 kinds of microelements and 18 kinds of amino acids.

It has the following benefits:

- It's potassium content, which can resist fatigue, is 55 times of that in milk;
- It's calcium content is 11 times of that in milk (its calcium is the active calcium of natural plants);
- It's protein content is 14 times of that in milk;
- It's  $\beta$ -carotene content is 5 times of that in carrots;
- Its VC content is 60 times of that in apples;
- Its VE content is 128 times of that in tomatoes;
- Its vitamin B1 and B2 contents are 30 times of that in milk and 10 times of that in spinach respectively;
- It's iron content is 5 times of that in spinach;

- Its folic acid content is 8 times of that in spinach;
  - Its natural chlorophyll content is higher than 500mg/100g;
  - Its superoxide dismutase (SOD) enzyme content is higher than 50000U/100 g.
4. Expelling toxins in the body and improving gastrointestinal tract functions. Barley green is abundant in dietary fibers and contains a considerable amount of lipometabolism enzymes, and thus it can promote intestinal peristalsis, effectively eliminate superfluous fat and expel most toxins in the body. The potassium included in barley green can improve a deficiency in intestinal functions or an ebbing in myodynamia, reinforce intramuscular activity abilities required for defecation, and thus drastically improve gastrointestinal tract functions.
  5. Eliminating free radicals in vivo and postponing aging. Barley green contains about one hundred biologically active enzymes, of which the most important is superoxide dismutase (SOD). SOD's major role is in degrading active oxygen (ie. eliminating free radicals), so as to delay aging in the human body.
  6. Because barley green contains abundant vitamins and zinc, it can stimulate hormone secretion, promote sperm production, and increase the secretion quantity and activity of sperm, so as to cure impotence, frigidity, sterility, barrenness, climacteric period syndromes, and to boost growth and development in teenagers.
  7. The abundant chlorophyll contained in barley green may ameliorate intoxication symptoms of chemotherapy and curative treatments. In addition, it is able to resist infection from radiation including ultra-violet radiation, X-ray radiation, television and computer screen radiation and electromagnetic radiation of mobile telephones.

The three types of Tines barley green troches are fine health foods which mixed with other effective constituents, and the raw material is the barley seedling, which is a kind of pure natural, contamination free organic food. In addition, the product is produced by the low temperature break-wall condensation technique and low temperature spray drying techniques.

(Relevant Story) Yixiu Di Yuan, the famous pharmacologist of Japan, dedicated himself to study medicament and has established a compounder. In order to develop new products, he did operations and experiments in person and gained illustrious

achievements. When he had gained his reputation, an unhappy thing came forth: one kind of his medicaments contained Hg, although it owns very quick curative effect. After he tried out it himself, he became the first sufferer to this medicine: the hair turned hoary; the alveolus was in pain; the teeth were corroded and fell off, and the former healthy soma suffered a disastrous decline, yet he was just 38 years old. As a medical doctor, he asked himself during desperation: I want to produce pharmaceutical product for others, why I am poisoned firstly? He could see patients recover from disease by taking his medicines ever and again, synchronously, he found that pharmaceutical products also brought fearful side-effects to the patients.

Due to understanding of pharmacology and pharmaceutical property, he knew that there was no chemical drug which could save him distinctly. Upon that, he approached into a new field, the profound traditional Chinese medicine. According to lunar physics theory, he began to study the natural foods. The so-called “natural food” means the plants which are born from the soil firstly, then take root and burgeon, and thrive resorting to energy of the sun. He deemed that green plants has best function in detoxication because of its “chlorophyll”, which is able to produce essential nourishment from carbon dioxide(CO<sub>2</sub>) and sunlight for plant. Thereupon, he dedicated himself into the study of green plants. He screened out more than 100 kinds of greenery plants from over 1000 kinds of plants, and then did much work on them such as extracted the juices, taste the plants and analyzed them, he had degusted 150 kind plants in all during 13 years. However, he found that few plants own the fine effects. On this occasion, facing the infinite lush barley green terra, he found that the barley green, which had bottle green nervure and grew on the paramos, owned the richest and balanced nutrition along with the most nearby to human demand of all the monomial plants around the world. More delightfully, it contained many active enzymes and chlorophylls. From then on, he stuck to drink several dock-glass self-made barley green elites ----- barley green juices (namely the original state of barley green) everyday. No more than half a year, the wonder happened-----the teeth grew to trimness again; the hair became black completely; the face took on ruddy; all symptoms after intoxication disappeared. At last, Yixiu Diyuan gained health again

miraculously.

From his studies, he found that: the juice that extracted from barley burgeon contained high-nutrition and active enzymes and chlorophylls. Chlorophylls owned the best effect in detoxification, which provided him the hope of living. He finally ascertained to take chlorophyll as the object of further study. Via several years' efforts, he analyzed the components, did toxicological experiments, propagation tests and lots of clinical studies for barley burgeon juice. He found that burgeon juice of barley contained four essential ingredients that were closely linked to life: mineral matter, ferment, chlorophyll and vitamin; furthermore, the contents of each ingredient "unusually" higher than common foods. Especially to the content of chlorophyll, which was similar to hemoglobin in human body, thus it was named "green blood". Barley burgeon is the only single-fountain species which can provide abundant and balanced nutrition.

Facing with the supernatural favor from nature, people named the green juice "barley green" with indebted emotion.

## **TIENS Barley Green Tablets (I)**

### **I. Relevant fundamental knowledge**

In recent years, owing to faster working cadence, changing in life style and polluted environment, the acidic soma has accounted for 85% of the whole people, which brings prodigious hazards to human health.

At the normal physiological status, the pH of blood ranges from 7.35 to 7.45, which assumes to be the alkalescent. Though acidic substances can be produced in the process of metabolism consecutively, the perfect accommodation mechanism in the body is able to maintain the equilibrium state. With the aging process in the body and various influences outside, the acid-base equilibrium may be broken, which cause the acidic soma.

Reasons for acidic soma:

- ◆ Dietary habit: take too much acid food.
- ◆ Work stress: too heavy work stress will aggravate the burden of body.
- ◆ Physiological factor: regulation engineering of body declines.
- ◆ Environmental factor: environmental pollution.
- ◆ Psychological factor: influence of psychological factor should not be ignored.

The typical sub-health groups include: people who have heavy work pressure or discomforts in gastrointestinal tracts, people who often stay up all night or use computer continually, and people who live in polluted environment as well as long-term drinking or smoking. The main symptoms to them are fatigability, insomnia, slow in response, constipation, decline in immunity memory and energy. The humoral pH of these people assumes to be acidic. Fortunately, TIENS Barley Green Tablets (I) is the health food designed for the acidic soma group technically.

## **II. Main ingredients and efficacies of the product**

### 1. Main ingredients of the product

2. Mixed with oyster extracts, Barley green is rich in chlorophylls, activity enzymes, vitamins, mineral matters, dietary fibers, etc.

#### 1) Oyster extracts: oyster is the precious sea-nutrition which reputed to be “milk in sea”.

It tastes delicious and owns effects in nourishment and health care. Oyster extracts are made from handpicked contamination free fresh oyster, which is abundant in glycogen, taurine, 18 kinds of amino acids, B-group vitamin, essential macroelements and microelements to the body.

### **Physiological functions of oyster extracts:**

In the modern medicine, oyster is widely used for: curing diabetes, high blood pressure and woman neuralgia, decreasing the bodyweight, as well as beautifying the body. Moreover, the main functions for oyster extract are cleaning the blood, expelling the toxins and enhancing the body immunity.

- Oyster is abundant in vitamin and mineral matters, especially to the microelements such as selenium and zinc. Zinc is the important nutrition to sustain the health for male genital system. In addition, deficiency in zinc is easier to cause

the decreasing sexual function and corpulent prostate.

- The high grade protein accounts for more than 20% of the extractive powder from oyster extract. The amino acid composition in the powder assumes to be so perfect that it overtakes the milk and breast milk.
- Although Oyster is poor in lipids, most of the lipids are the physiology-active one, such as multiple-phosphatide, phosphate inositol, EPA, DHA, etc. All these ingredients are able to prevent arteriosclerosis, resist thrombus and aging.
- Oyster is abundant in natural taurine, which is useful for diminishing the inflammation, detoxification, protecting liver and benefiting gallbladder, lowering blood sugar, boosting the growth of infant cerebrum, soothing the nerves and strengthening brain.
- The sugar contained in oyster is the glycogen, while the content of glycogen in oyster extract is 20%~40%. Glycogen is the restored form for tissue energy and the physical assurance for efficiency and staying power of brain movements.

## 2. Efficacy of the product

- 1) Balancing acidic soma for human body, preventing sub-health
- 2) Supplementing the nutriments comprehensively, enhancing physical strength
- 3) Improving the body endurance and stamina
- 4) Expelling toxins in the body, improving gastrointestinal tract functions
- 5) Improving the memory, soothing the nerves and strengthening the brain
- 6) Clearing away free radical in vivo, postponing the aging

## **III. Target customers and edible method**

### 1. Target customers:

- 1) People who have heavy work pressure
- 2) People who suffered discomfort in their the gastrointestinal tracts
- 3) People who often stay up in the night
- 4) People who always use computer
- 5) People who live or work in contaminated areas

- 6) People who drink or smoke over a long period of time.
3. Edible method: three times a day, 4 grains at a time; take it with warm boiled water.

## **TIENS Barley Green Tablets (II)**

### **I. Relevant fundamental knowledge**

Diabete is a syndrome with multiple-pathogeny, either due to deficiency of insulin and the increasing antagonistic insulin, or because insulin can not exert its normal physiological functions in the target cells, which result in metabolic disorders of glucose, protein and lipid. At present, people who suffered the diabetes are more than 130 million in the world, and the number is increasing day by day. Therefore, it has been “the third killer” in the world, while the former two killers are tumour, and diseases in cardiovascular and cerebrovascular.

According to the estimation of experts in Ministry of Health, more than 40 million people suffered the diabetes in China nowadays. In addition, 30 million people suffered the “increasing tolerance to sugar”, so they are likely to become diabetes patients. The experts estimate that the incidence of diabetes in China may be 11% by the year of 2010.

Generally, people always take the Western medicines to decrease the concentration of blood sugar. Although the effectiveness is quite obvious, it may result in many side-effects such as drug tolerance, drug resistance, injury of liver and kidney for long-term taking. TIENS Barley Green Tablets (II) is secondary to lower the blood pressure and blood fat.

### **II. Main ingredients and efficacies of the product**

#### **1. Main ingredients of the product**

Barley green is the main component, while balsam pear extract and mulberry leaf extract are also added to the product. So it is rich in many bioactive substances such as sterling chlorophylls, active enzymes, balsam pear saponins, mulberry leaf polysaccharides, vitamins and mineral matters, etc.

##### **1) Balsam pear**

With the micro-cool nature and flavor, balsam pear is secondary to lower blood sugar, clear away heat, nourish and strengthen body, along with resist oxidation, tumor, bacterium and virus. Active ingredients of balsam pear: balsam pear saponins, proteinoid active substances ( $\alpha$ -balsam pear element,  $\beta$ -balsam pear element, MAP30), para-insulin active substances (polypeptide -P) and manifold amino acids.

The traditional Chinese medicine deems that balsam pear is bitter in heart; cool in nature to clear away heat and nontoxic; it belongs to the channel of liver, spleen, heart, stomach fluid; balsam pear is able to clear away heart-fire and get rid of annoyance, relieve heat and alleviate the thirsty, clear liver and sight; it can be used to treat pyrexia, polydipsia and dysphoria, prevent the hsiriasis.

The *Compendium of Materia Medica*, *Diannan Herbals* and other books recorded that balsam pear has efficacies of clearing sight and detoxication. Scholars in the world have studied the functional factor of lowering the blood sugar, the results manifest that balsam owns the following physiological functions:

□ The functional ingredients such as vegetal insulin, saponin in balsam pear are able to lower the blood sugar. The studies indicate that balsam pear extracts are capable of stimulating isolated pancreas to release the insulin in vitro. The extracts from the immature balsam pear fruits are useful to stimulate pancreas  $\beta$ -cellular insulin isolated from obese hyperglycemia little mouse, and the insulin can not be restrained by L-adrenaline. According to the subcutaneous injection, the blood sugar peptide separated from balsam pear fruit can lower the blood sugar for animals and human. Moreover, the balsam pear juice owns the obvious effect to improve the sugar tolerance for 73% of the whole patients who suffered diabetes after their manhood.

□ Influence on immunity functions: When the little mouse is single injected by avirulent gamma-dose balsam pear inhibiting factor, the results shows that the factor can delay skin reject reaction of homotransplantations and inhibit spleen cell's reactions from the tolegumin (ConA) and phytohemagglutinin (PHA), but no

reaction of bacterium lipopolysaccharide was found. Moreover, it is able to eliminate the cells reactions of plaque forming cell (PFC) caused by T-cell dependency antigen, and strengthen the spontaneous cell toxic functions for the macrophages.

□ Resisting cancer: In vitro, the crude proteins extracted from balsam pear own the cell toxic functions to lymphoma cell and assume the dose dependency. In addition, crude extracts of balsam pear can kill human leukemic lymphocytes assuming dose dependency, and the activities of normal human lymphocyte will not be affected. Moreover, the effective constituents are heat-resistant.

□ The high-energy clearing-fat element contained in balsam pear, namely the balsam pear element (RPA), has a powerful function in slimming. Some studies also indicate that balsam pear extracts are able to inhibit the bacterium and resist the virus.

## 2) Mulberry leaf extracts

Mulberry leaf, as the material both for medicine and food, has been widely used by the folks for a long time. The traditional Chinese medicine has used it to treat the wasting-thirst (corresponding to the diabetes in modern medicine). The *Compendium of Materia Medica* recorded that: mulberry leaf “it is able to satisfy one’s thirst when decocted instead of as tea”; “if the moxibustion-cooked leaf decoct, it will be able to satisfy one's thirst instead of tea”. The modern doctors often match it with complex prescription of Chinese traditional medicine to apply in clinic, and they always gain very good effect. Modern studies in pharmacology show that mulberry leaf is able to restrain the increase of the blood sugar, and to prevent and cure the diabetes. During the recent years, researchers in many countries found that: mulberry leaf is abundant in amino acids, celluloses, vitamins, mineral matters and manifold physiological active substances, so it is able to lower the blood sugar, blood pressure and blood fat, and to postpone the aging.

Researcher in the Kanagawa Institute for Food of Japan find that mulberry leaf contains 17 kinds of amino acids, carbohydrate, vitamin, microelement (zinc, iron, calcium, etc) and mineral matter, thus it is high in nutrition (as per list enclosed).

Attached list: Nutriments and their contents in mulberry leaf

Nutriments in mulberry leaf	Amino acids (g/100g dry product)	Vitamin (mg/100g dry product)	Dietary fibers	Microelement and mineral matter (mg/100g dry product)
Content	Amino acid: 10.10g; The essential amino acids : about 3.3g	VB1: 0.59 VB2: 1.35 VC: 31.6 Carotene: 7.4 Retinol: 0.67	Dietary fibers : 52.9%; The soluble Dietary fibers: 7.9%	Ca:2699;K:3101;Zn:6.1;Fe: 44.1;Na:39.9; P:238; a little other microelement: Cu, Mg, Mn

The studies show that the mulberry leaf is able to lower the blood sugar in the following two ways: □. The mulberry leaf alkaloid is able to inhibits the activity of disaccharide catabolic enzyme, so as to restrains the small intestines from absorbing the disaccharides, and to lower the peak value of blood sugar after meal; □. The alkaloid and polysaccharide from mulberry leaf can stimulate  $\beta$ -cell to secrete insulin, which is able to promote usage of sugar for cells and synthesis of hepatic glycogen along with to improve the sugar metabolism, so as to lower the blood sugar eventually. The alkaloids, polysaccharides from mulberry leaf and other ingredients in the product can exert their synergistic functions.

## 2. Efficacy of the product

- 1) Assisting to decrease blood sugar;
- 2) Assisting to decrease blood pressure and blood fat;
- 3) Balancing acidic soma for human body, prevent sub-health;
- 4) Supplementing the essential nutriments for body comprehensively
- 5) Eliminating toxins in the body to improve the gastrointestinal tract functions;
- 6) Removing the free radicals in human body, postpone the aging.

## III. Target customers and edible method

### 1. Target customers:

- 1) The diabetics and people who suffered the increasing sugar tolerance

- 2) People who own the acidic soma
- 3) People who suffered discomfort in their the gastrointestinal tracts
- 4) People who often stay up in the night

## 2. Edible method

Three times a day, 4 grains at a time; take the product with warm boiled water.

## **TIENS Barley Green Tablets (III)**

### **I. Relevant fundamental knowledge**

(Relevant Story) The traditional Chinese medicine deems that the lodged stool is the source to all the diseases. On the other hand, the Western medicine judges that the wastes from the metabolism of fat, sugar and protein, as well as the putrefactions from the food debris in intestines are the main source to toxins in vivo. In addition, the sources to the diseases also include the harmful substances carried from the external environments, such as the heavy metal, pesticides, chemical products, medicines, polluted air and water, etc. The modern medical experts deem that the substances which are harmful to the cells, tissues, and organs in the body can be called “toxin”.

In the long-term processes of evolution, the human beings have got the powerful inner protection mechanism for expelling the toxins. The automatic expulsion of toxin in human body can be achieved by dissolve or discharge. Dissolve: many organs in human body (such as liver and kidney) are able to dissolve toxins. Discharge: most of the toxins in human body come from the metabolisms in vivo. The metabolisms can produce many kinds of wastes that are needless to the human body, and then the wastes will be discharged by dejection, dribble urine, perspiration and some abnormal “expulsion of toxin” ways such as throw up, cough, diarrhea, so as to dispel the toxins timely.

With the heavier of the work pressure and faster of the life cadence, more and more toxins will be produced in human body. In addition, the polluted external environments also increase the body burden. At last, the aging body and diseases will operate

together, which cause the deterioration of the functions to expel the toxins in human body.

## **II. Main ingredients and efficacies of the product**

### 1. Main ingredients of the product

Barley green is refined from the water-soluble corn dietary fibers and konjak powder. It is abundant in sterling chlorophylls, organized enzymes, water-soluble dietary fibers, glucomannan, vitamins, mineral matters and many other biological active matters.

1) Dietary fibers: They are named the seventh nutriment after the six essential nutriments to human being. According to the definition by FAO and FDA, dietary fibers are all the components in edible animals and plants which will decompose with water but have nothing to do with the digestive enzymes. Generally, the carbohydrates in the food which cannot be digested and absorbed by the body are called dietary fibers. However, according to the solubility, the dietary fibers can be classified into water-solubility dietary fibers and infusibility dietary fibers, the water-soluble corn dietary fibers in this product belong to water-solubility dietary fibers.

### 2) Water-soluble corn dietary fibers

#### A. Provide the nutrition

The high-fiber foods can lower the incidence of heart disease, cancer of colon, alveolar diseases. The soluble dietary fibers exert greater functions to the human body physiological metabolism. For example, it will be helpful to prolong the residence time of the foods in intestines, increase the volume and water content for the dejection, so as to prevent the constipation. Thus, increase the content of water-solubility dietary fibers will be beneficial to improve the functional performances of dietary fibers.

#### B. Regulate the intestinal floras

The dietary fibers cannot be digested and absorbed in mouth, stomach and small intestines of the human body, so the part which are not digested and absorbed will enter the large intestines, and then it will affect the quantity and categories of microorganism

floras. Moreover, the water-solubility dietary fibers can receive more water, so as to maintain the dynamic equilibrium of floras in the intestinal.

#### C. Prevent the obesity

The fatness is mainly caused by taking too much energy and substances in daily life when we get rid of the reasons in heredity and diseases. When we take too much energy substances especially the carbohydrates, the redundant energy from the metabolism will change into the fat, and then the fat will deposit in the organs and subcutaneous tissues, which cause the occurrence of fatness. Generally, the dietary fibers cannot provide the energy themselves, but they own the high retentiveness and swellability, which will cause the volume functions to the stomach and intestines, as well as the cause the satiety. Afterwards, it will decrease the ingesta and lower the absorptivity of intestines to the fat, which will prevent the fatness effectively.

#### D. Facilitate the defecation, prevent the cancer of colon

The dietary fibers is strong in sopping, so it will be useful to increase the defecation volume, facilitate the shaping of defecation, improve the discharge, shorten the residence time of defecation in intestines, inhibit the contact between carcinogens and intestinal walls, decrease the carcinogenic concentration in intestinal tracts, so as to decrease the danger of cancer of colon.

#### E. Influence on hypertension, cardiopathy and arteriosclerosis

The dietary fibers are able to promote the excretion of bile acids, inhibit ascend of serum cholesterol and triglyceride, so as to prevent the occurrences of atherosclerosis and coronary heart disease. The long-term research and clinical data indicate that: hypercholesterolemia is one of the hazards to hypertension, cardiopathy and arteriosclerosis. In addition, the cholesterol in the blood originates from intake food and synthesis in vivo, and the main catabolism for it is changed into cholic acid. The cholesterol and cholic acid will be discharge out of the body mainly by dejection. Lots of researches show that the discharges of cholesterol and cholic acid have intimate relations with dietary fibers.

#### F. Other functions

Dietary fibers are also able to lower the blood sugar and improve the body immunity, as well as stimulate the secretion of insulin. When we take much dietary fibers, the high fiber will increase the sensitivity of the tissues to insulin, so as to lower the blood sugar. Many soluble dietary fibers can improve the phagocytic rate and phagocytic index for macrophages, which will stimulate the occurrence of antibody and strengthen the body immunity.

### 3) Refined konjak powder

Konjak is also called betel, which is the herbaceous perennial and belongs to the konjak genus of Araceae. The process for producing the refined konjak powder is: wash and flay for the fresh konjaks first, then cut them up into the strip or flake, dry and dehydrate them in high temperature fixation and low temperature dryness by virtue of the special roasting devices; after the konjak strips or flakes are dried, then break up, grind and get rid of the starch and fibers by special equipment for the refined konjak powder, afterwards, the refined konjak powder is further purified and refined. At last, we will get the refined konjak powder which contains the glucomannan for more than 90%.

Konjak is the food that low in heat, low in proteins, low in vitamins but high in dietary fibers, so only the dietary fibers are the effective nutrients. The refined konjak powder is gained by physical method from konjak corms, so it is the condensed product of the effective nutrients. In addition, the main active ingredient is glucomannan, which belongs to the soluble hemicellulose. The alimentary and health protections for the konjak are helping the dietary fibers to regulate the imbalance nutrition, such as expel the toxins, lighten the body weight, lower the blood fat, prevent constipation, lower the blood sugar, etc.

The *Compendium of Materia Medica* and *Herbals* in past dynasties recorded that: konjak is cold in nature, bitter in taste, “if the tuber is considered as the medicine, it will be effective in detoxification, detumescence, dissolving the sputum, dispelling the induration, improving the silt, etc”. It has been widely used to cure cough, colic, pain in breast, scrofula, burn, etc. In addition, it will be benefit for invigorating the stomach and helping the digestion if it is fried for a long time and taken orally.

## Physiological functions of the refined konjak powder

### A. Eliminating the toxins in vivo

The refined konjak powder can suck water and swell in alimentary tracts, promote the peristalsis of the intestinal tracts, expel the toxins of the dejection out of the body timely, decrease the toxic actions of the toxins to the internal walls in the intestinal tracts. In addition, it is able to absorb the heavy metal ions and other harmful substances in intestinal tracts, as well as decrease the damage of heavy metal ion and harmful substances to the human body.

### B. Lightening the body weight

The American affirmed that the konjak is effective in lightening the body weight by double blind, and the West China University of Medical has further proved the function. Some people took the refined konjak powder for 30 days, the scale of decrease in their body weight is 78.4% and the extent of the decrease is 0.5--4.7 kg, but the individual difference is also quite heavy. In addition, the filling action of the dietary fibers in the stomach will increase the satiety, as well as decrease the absorption to nutriments which produce the heat.

### C. Regulating the lipid metabolism

The coronary heart disease has been one of the main reasons for death to the human being. No doubt that disorder in lipid metabolism will accelerate the atherosclerosis. Lots of epidemiology investigations and experiments confirm that: the level of plasm cholesterol is intimately related with the incidence of atherosclerosis and coronary heart disease.

Generally, the plasm lipid includes the cholesterol and triglyceride, but the functions in lowering the blood fat may differ with the dietary fibers. Konjak is able to lower the blood lipid effectively, namely that it can lower both levels for blood cholesterols and triglyceride. Moreover, it has been verified that when the blood fat is in a normal level and it won't decrease continuously, it will be beneficial to regulate the lipid metabolism and prevent the hyperlipemia. Furthermore, the experiments indicate that to people whose blood fat are in the dangerous critical value, the refined konjak powder can sustain the normal level for them so as to prevent the hyperlipemia.

#### D Preventing and curing the constipation

(Relevant Story) Investigations in Britain indicate that 10% of the whole people are puzzled at the chronic and functional (habitual) constipation, the incidence increases with the age, and it is 3% for the young people while 20% for the old one, the phenomena is similar in other developed countries. In the past, the incidences in China and other developing countries are not high, but the number of people who suffered the constipation increase heavily for the fine of the food and aging of the age. However, most of the patients take the cathartics themselves, but few of them will see a doctor. Most of the bedfast patients because of the acute diseases (such as cerebrovascular accident, functional failure in heart, lung and kidney, etc) may suffered the constipation, so it is the essential treatment to keep smooth of the stool.

The researches both here and abroad have proved that konjak and sorts of dietary fibers are effective in controlling the constipation. Zhangmaoyu in West China University of Medical manifest that konjak can increase the wet shit weight per day (refined konjak powder about 1g can increase the weight for 11.4g) and water content in the dejection; it also can shorten the operation time and the average defecate time; furthermore, it can increase the number of bifidobacterium.

#### E. Improving the sugar metabolism

Controlling diet is the important measure for curing the diabetes. Fortunately, the dietary fibers cannot be digested and absorbed by the body, they have no heat but can increase the satiety, in addition, they are able to decrease and postpone the absorption to sugar, so they are the prominent medicines for secondary curing the diabetes. Moreover, the researches indicate that the soluble fibers can improve the sugar metabolism remarkably, but the infusibility fibers show no influence on the sugar metabolism. Huang Chen-Yu and others in West China University of Medical have studied the refined konjak powder's influence on the sugar in diabetics, and the results demonstrate that refined konjak powder can lower the blood sugar; furthermore, the effect is better on the severer diabetics, and it is more effective in lowering the blood sugar after the meal and limosis.

#### F Other functions

The literatures reported that many polysaccharides which belong not to the starch are able to regulate the body immunity, strengthen the nonspecific immunity, cellular immunity, humoral immunity. The pilot studies indicate that refined konjak powder can improve the immunosuppression state, specific and nonspecific immunities for the mouse, so they own the activities in immunoregulation.

## 2. Efficacy of the product

- 1) Expelling the toxins and cleaning the body
- 2) Lightening the body weight and molding the good body conformation
- 3) Removing the free radicals in human body, postpone the body aging
- 4) Improving the functions of gastric and intestinal tracts
- 5) Balancing the acidic body, preventing the sub-health
- 6) Supplementing the essential nutriments for human body comprehensively

## **III. Target customers and edible method**

### 1. Target customers

- 1) People who need expelling the toxins in their body
- 2) People who want to mold their stature
- 3) People who suffered from the constipation and discomforts in their the gastrointestinal tracts
- 4) People who own the acidic body

### 2. Edible method

Three times a day, 4 grains at one time; take the product with warm boiled water.