

ZENDZING

ZENDZING

Hangover Relief
Liver Tonic



WHOLISTIC WELLNESS LIMITED

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PART 1

Background Overview

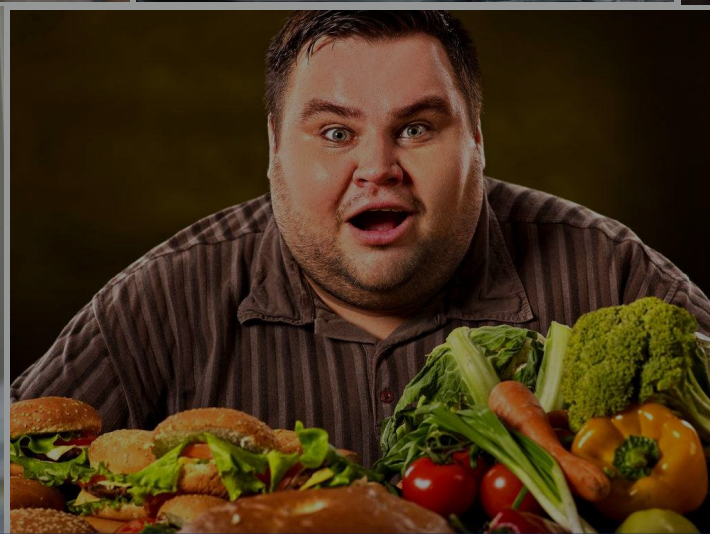
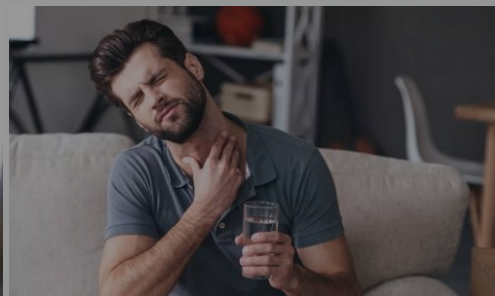
WHOLISTIC WELLNESS LIMITED

Are you worry about

- Over drink in a party?
- Dizziness, headache, vomiting after drinking
- Hangover, bloating, stomach pain
- Liver disease due to alcohol

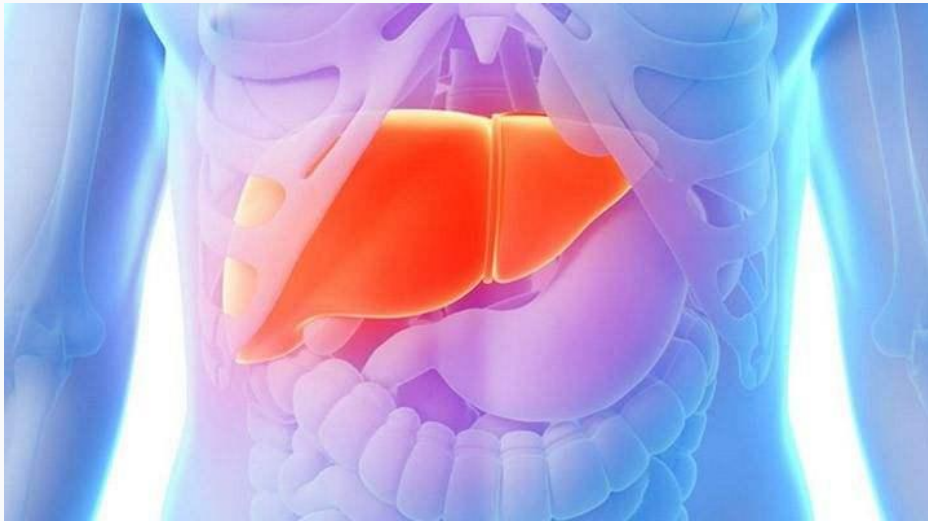
Your liver is getting hurt and you do not care?

Drinkers, smokers, business people, overworked people, staying up people



Overdrinking alcohol will cause:

Liver cirrhosis, hepatitis, liver cancer, gastric mucosa damage, gastric ulcers, gastritis, spleen and stomach damage



2011-2020年中国主要慢性肝病患病人数（万人）



数据来源：公开数据整理

•Chart of the number of patients with major chronic liver diseases in China, 2010-2020

Liver Metabolic detoxification hub

Metabolism of alcohol ,
sugar, protein, fat,
vitamins , hormones

Metabolism

The liver is the largest
reticular endothelial cell
phagocytic system that
fights various invading and
endogenous antigens

Immune

Bile made and
secreted by liver
cells to help
digestion and
absorption of fat

Bile
generate

Almost all clotting
factors are made by
the liver

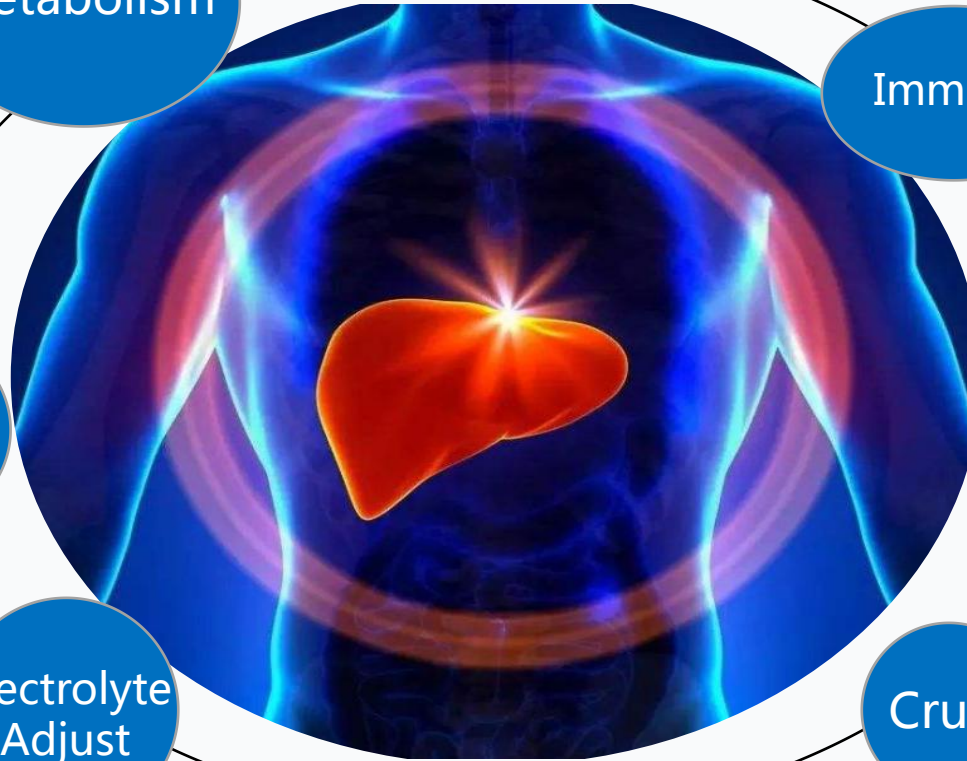
Cruor

Detox

Metabolism and
breakdown products of
toxins, and drugs

Electrolyte
Adjust

Edema due to electrolytic
imbalance of sodium,
potassium, iron, phosphorus,
etc. during liver damage



Liver damage caused by excess alcohol

90-95% of alcohol is metabolized by **THE LIVER!**



Alcohol

Alcohol-related liver disease (ARLD) is caused by damage to the liver from years of excessive drinking



Gastrointestinal

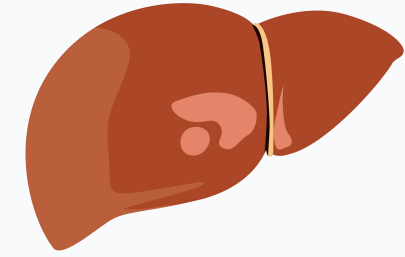
Strong stimulus will make the gastric mucosa congested, increase gastric acid secretion, and even cause **vomiting and acid reflux**

blood circulation



Brain

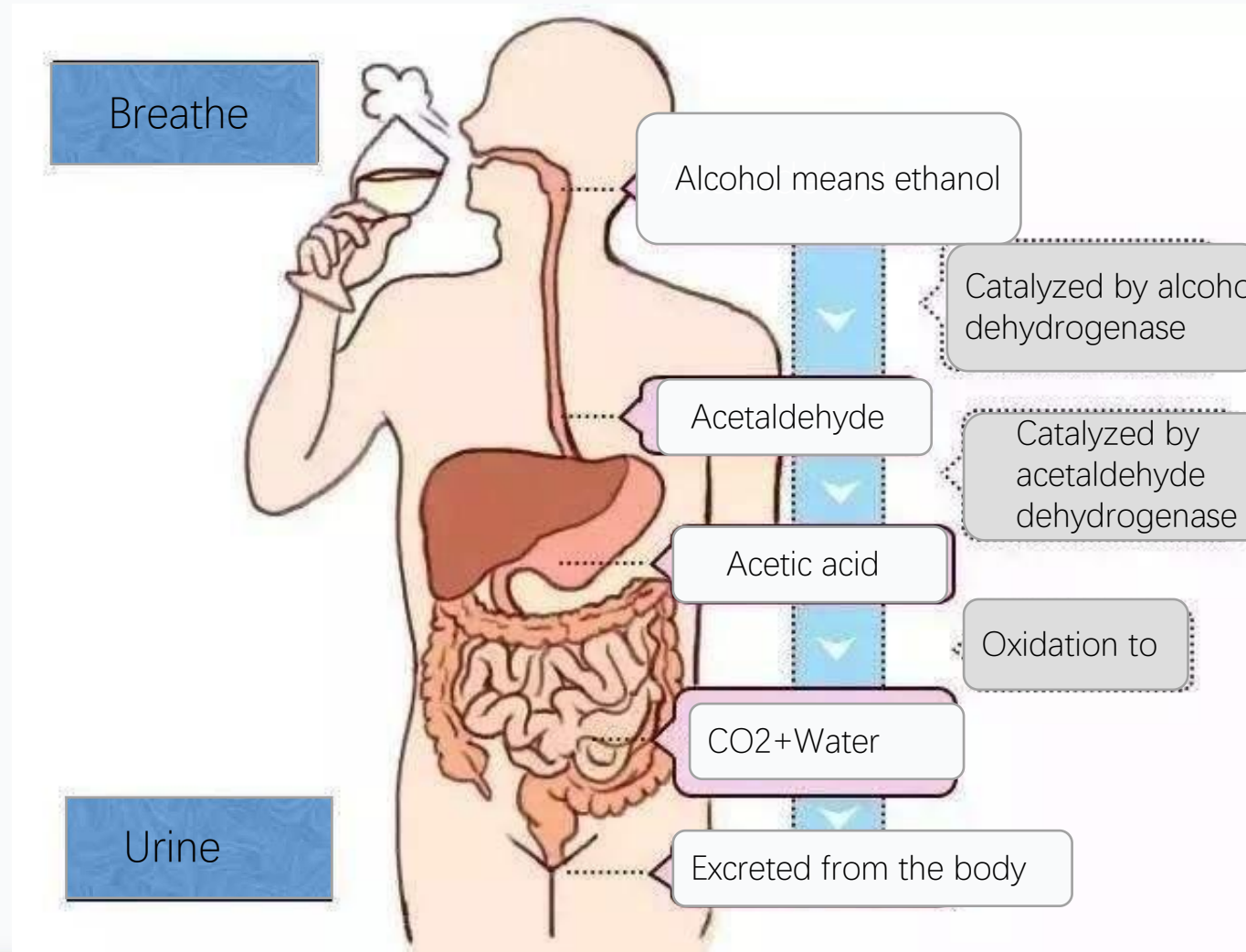
Entering the brain through the blood-brain barrier can inhibit nerve cell activity and even damage brain cells. Therefore, people often get symptoms such as **headache, dyskinesia, and slow response after being drunk.**



Liver

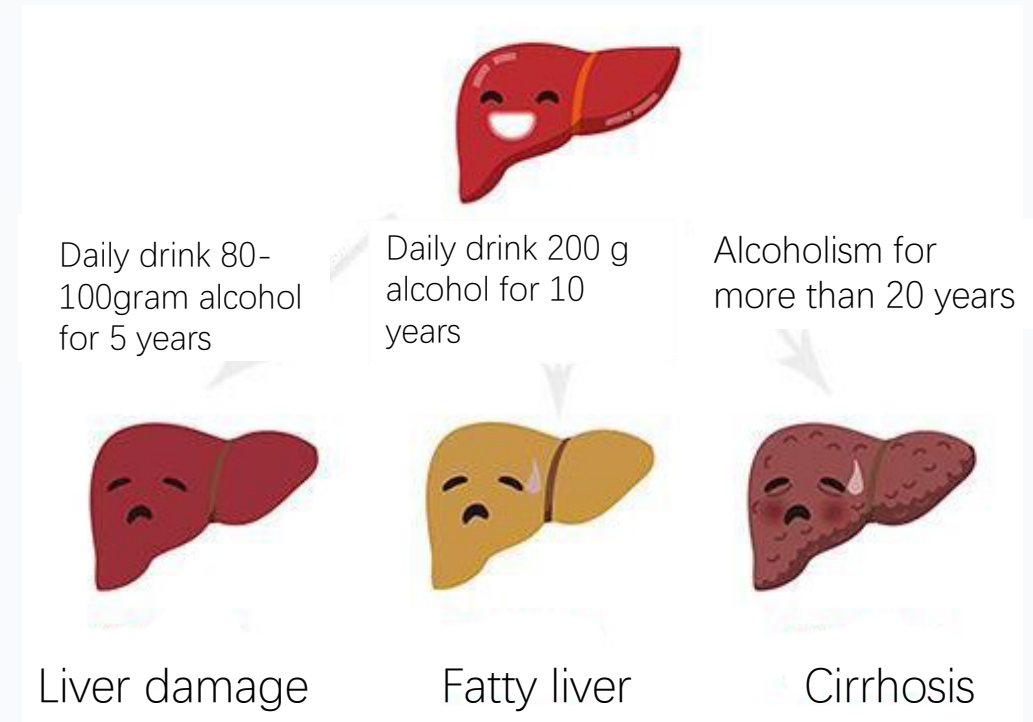
Alcohol is metabolized in the liver and is finally excreted by non-liver tissues such as the lungs, kidneys, and skin. **Alcohol metabolism will produce acetaldehyde, reactive oxygen species, hydrogen ions, etc. Acetaldehyde can cause alcoholic liver damage, reactive oxygen species can cause liver function decline, liver necrosis, cirrhosis and liver cancer**

Metabolic process of alcohol



Hangover reaction

- Due to excessive drinking, the absorption rate of ethanol in the body is greater than the oxidative metabolism rate
- More ethanol enters the human brain through the blood circulation, acting on the central nervous system and damaging brain cells
- A large amount of acetaldehyde and free radicals produced by ethanol metabolism, forming a free radical reaction and stimulating the nervous system
- Disorders of autonomic nerve balance cause a rapid heartbeat, imbalance of water and electrolyte balance in the blood, and eventually cause headache, dizziness, local skin irritation, gastrointestinal discomfort and other uncomfortable after hangover



How it Works

ZendZing Hangover Liver Tonic

- Reduce alcohol absorption
- Speed up alcohol metabolism
- Reduce blood alcohol concentration
- Reduce its damage to the body

Enhanced ability to scavenge
acetaldehyde and free radicals
Reduce its damage to the liver

PART 2

Product Introduction

WHOLISTIC WELLNESS LIMITED

ZendZing Enzyme drink

Good complement for hangover and liver

ZendZing Enzyme Drink target to the alcohol metabolism pathways and mechanisms, referring to classical Chinese medicines for hangover recorded in ancient books, using 13 medicinal and food homologous herbs, corn oligopeptides, and tea theanine as raw materials. It is prepared by hydrolysis and fermentation technology. It contains puerarin, gardenia flavonoids and other anti-alcoholic and liver-protecting ingredients, which can reduce alcohol absorption, promote alcohol decomposition, and improve acetaldehyde and free radical metabolism after increased alcohol consumption.

Is a Fast hangover cure, Relieving discomfort after drinking and protecting the liver from damage.



Hangover Relief Liver Tonic Enzyme

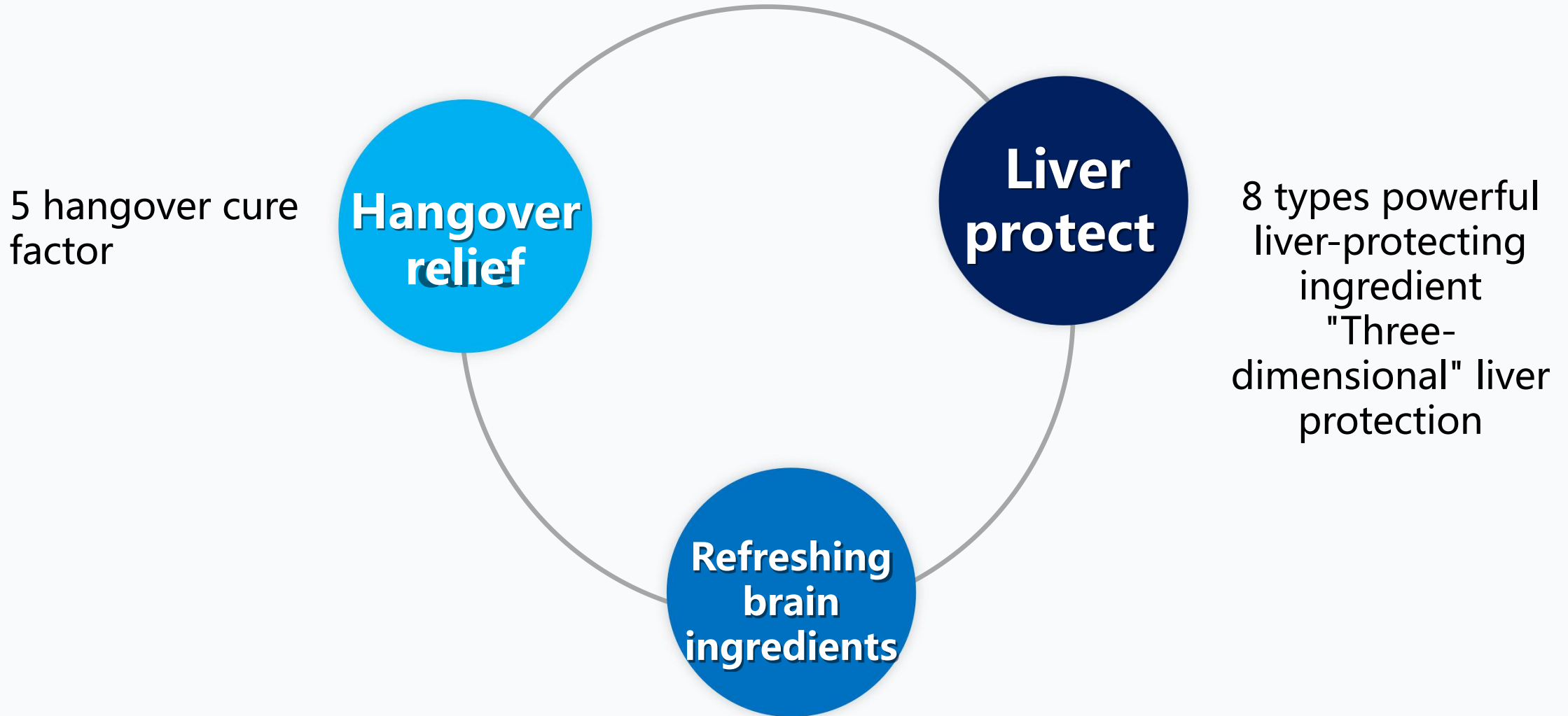
Inhibit alcohol absorption, promote alcohol metabolism, sober-up and protects the liver.

Dosage : 50ml oral liquid

Serving direction : 1-2 ampoule/time

Main Ingredients : Puerarin , hovenia dulcis , phyllanthus emblica , seabuckthorn , chrysanthemum , olive green fruit extract , cassia , wolfberry , mulberry , Chinese yam , angelica dahurica , Polygonatum sibiricum , mulberry leaf , pueraria, corn Oligopeptide, L-Theanine.

Formula Design - Hangover Relief & Liver Tonic



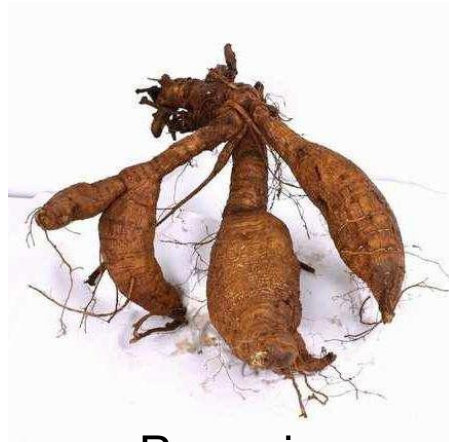
Hangover Relief

- 4 major hangover herbs source from ancient Chinese Pharmacopoeia
- 5 major hangover and liver protection factors
- Corn oligopeptide prepared by **exclusive patented technology**

- 4 major hangover herbs source from ancient Pharmacopoeia



Olive green fruit



Puerarin



Hovenia dulcis



Chinese Yam

Modern research progress of unilateral hangover Chinese medicine recorded in ancient books

Olive Green Fruit Extract

- "Kaibao herb" 《开宝重定本草》 (A.D.973 in Song Dynasty) records the olive "sour, sweet, warm-natured, non-toxic. benefits to hangover cure.
- "Diannan Herb Medica" 《滇南本草》 (A.D 1436 Ming Dynasty) records "to cure all inflammations of the throat ... to relieve damp heat ... to relieve fish poison, alcohol".

The mechanism of olive hangover liver protection mainly includes the following aspects :

1. Promote gastrointestinal motility and reduce ethanol absorption
2. Activate alcohol dehydrogenase in the body and promote the decomposition of ethanol
3. Protect gastrointestinal mucosa and promote pathological recovery
4. Enhance liver cell function and promote liver cell regeneration
5. Accelerate free radical scavenging, stabilize cell membrane structure
6. Corrects lipid metabolism disorders and reduces liver steatosis
7. Inhibit liver cell apoptosis and reduce liver tissue damage



Olive - Reduce ethanol absorption and promote ethanol metabolism

表 2-7 各模型组小鼠酒精耐受时间和恢复时间结果

Table 2-7 Endurance and recovery time of all model groups of mice

组 别	例 数	耐受时间(min)	恢复时间(min)
阳性对照组	8	10.38±1.54	284.86±26.25
解酒护肝胶囊组	8	20.72±2.93 **	221.42±10.76* *
橄榄汁低剂量组	8	19.66±2.59 **	227.38±10.02 **
橄榄汁中剂量组	8	20.37±3.56 **	209.80±10.44 **
橄榄汁高剂量组	8	21.63±3.16* *	202.48±11.18 **

注：与阳性对照组比较 **表示P<0.01

从表2-7可见，与阳性对照组相比，服用橄榄汁和解酒护肝胶囊组小鼠的酒精耐受时间明显要加长，恢复时间明显缩短，有显著差异；其中大剂量橄榄汁组的效果最好。

橄榄汁对乙醇脱氢酶的激活作用

Table 1 Effects of OJ on AOH activation

Sample(g/kg)	Control group (nmol/L.min)	Experimental group (nmol/L.min)	Dehydrogenase activation rate (%)
OJL 低剂量组	0.558±0.038	0.629±0.070	12.72±3.39
OJM 中剂量组	0.663±0.046	0.763±0.062	15.08±1.70
OJH 高剂量组	0.669±0.062	0.778±0.068	16.29±2.54
OJD 橄榄透析液	6.32±0.021	0.796±0.061	21.20±1.04 ^a

Anti-drunk

Olives contain a lot of carbohydrates, vitamins, tannic acid, volatile oils and trace elements, which can help promote gastrointestinal motility, **Reduces alcohol absorption and has anti-drunk effects.**

Hangover Cure

Olives activate alcohol dehydrogenase in the body, **Promote the breakdown of ethanol and prevent drunkenness and hangover**, Reduce the harm of ethanol to the liver.

李玲望. 橄榄解酒护肝功能学研究及功效成分的分离与鉴定[D].福建农林大学,2006
张 怡, 李玲望, 曾红亮. 橄榄汁保肝作用及其功效成分的研究[J].营养学报, 2012.

Puerarin

"Shennong Bencaojing" 《神农本草经》 (A.D.200-250 Qin Han Dynasty) records that Puerarin can cure thirst, heat up, vomit, all kinds of paralysis, tonic yin, and alleviate poisons.

◦ "Qian Jin Fang" 《千金方》 (A.D 652) records Puerarin "control of drunkenness

"Ben Cao Yan Yi" 《本草衍义》 (A.D.1116) treats drunk people with pueraria powder, saying: "for cure drunk and thirsty people, it works well"

"Chinese Pharmacopoeia 2010" records that kudzu root has a sweet and pleasant taste, is cool in nature, enters the spleen, stomach, and lung meridians, has antipyretic and antipyretic effects, replenishes and quenches thirst, blood circulation and hangover cure .



Puerarin - Reduce blood alcohol concentration

表2 等剂量不同灌胃药物对小鼠的影响

Table 2 Effect of different drugs orally administered at the same dosage on mice

组别	醉酒时间/min	醒酒时间/min
对照组	9.71 ± 3.52	346.85 ± 79.02
葛根粗提物组	11.12 ± 7.65 [#]	314.22 ± 76.23
葛根异黄酮组	16.31 ± 5.24	327.26 ± 52.41
60%葛根素组	17.02 ± 4.85	322.15 ± 63.77
99%葛根素组	21.25 ± 8.54	265.68 ± 72.45

注：#. 与对照组相比，有显著差异 ($P < 0.05$)。

Puerarin and puerarin isoflavones have certain effects on acute anti-drunk hangover in mice, which can **effectively reduce the content of ethanol in the blood**, thereby delaying the drunk time of mice and shortening the hangover time of mice.

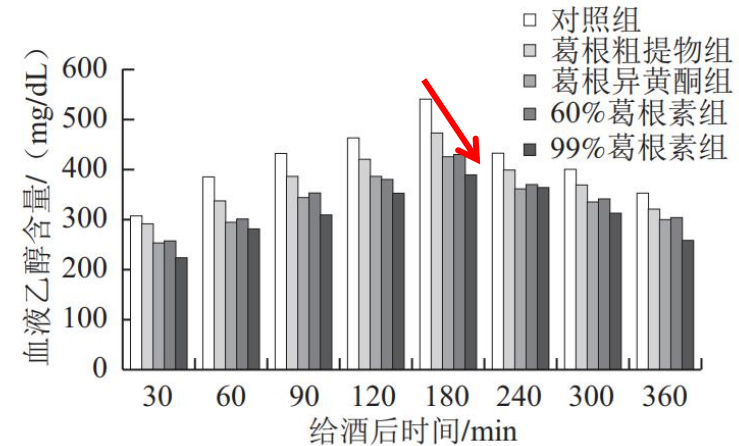


图2 不同含量葛根素对急性酒精中毒小鼠血液乙醇含量的影响
Fig.2 Effects of different contents of puerarin on the concentration of ethanol in blood of mice



Anti-Drunk :
Effectively delay and reduce alcohol absorption

Puerarin-Promote ethanol metabolism, prevent oxidative damage to the liver, and improve microcirculation

葛根总黄酮及葛根素解酒的药理研究进展

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[摘要] 目的: 归纳葛根总黄酮及葛根素用于解酒的实验进展。方法: 通过查阅国内外相关文献, 介绍葛根在古代的解酒作用及其主要化学成分, 概述葛根总黄酮和葛根素用于解酒的研究。结果: 葛根总黄酮是葛根提取物中的主要有效成分, 葛根素则是总黄酮中的一种活性单体成分, 均具有防醉酒、治醉酒和对抗酒精性肝损伤等作用。结论: 虽然对葛根总黄酮和葛根素解酒的研究取得了一定进展, 但对其作用的分子生物学机制方面应做进一步的研究, 使其机制更加明确。

口服 30% 乙醇($0.1 \text{ mL} \cdot \text{g}^{-1}$)造成的记忆障碍^[12]。葛根解酒毒的作用机理是服用葛根后, 可对抗乙醇代谢中起主要作用的乙醇脱氢酸活性减低的作用, 有利于乙醇在体内的分解代谢, 从而可以解酒毒^[10]。此外服用葛根后提高了肝细胞浆中谷胱甘肽活性水平, 有利于机体解毒能力的发挥, 保护肝细胞免受自由基、亲电子化合物和毒物的损害, 从而可减轻乙醇的毒性^[13]。

3 葛根素的解酒作用

小鼠 ig 葛根素溶液后, 其醉酒潜伏期明显延长, 睡眠时间显著缩短, 说明葛根素能够改善小鼠酒醉的异常行为的变化; 与模型组比较, 小鼠饮酒后体内超氧化物歧化酶、丙二醛、谷胱甘肽过氧化物酶、谷胱甘肽发生明显改变, 说明饮酒后, 机体产生大量的氧自由基使氧化反应增强。ig 葛根素

Hangover cure

Pueraria puerariae can counteract the reduction in the activity of ethanol dehydrogenate, which plays a major role in the metabolism of ethanol, and is beneficial to the catabolism of ethanol in the body, which can detoxify alcohol.

Liver tonic

Puerariae can increase the level of glutathione activity in the hepatocyte cytoplasm, and it can obviously antagonize the body's oxidation reaction caused by alcohol, which is conducive to the body's detoxification ability and protects liver cells from damage.

Eliminate sequelae of drunkenness (sleepiness)

Puerarin: can reduce blood viscosity, improve blood rheology indicators, improve microcirculation, thereby promoting the functional recovery of damaged brain cells and significantly reducing sleep time;

Hovenia dulcis

"Tujing bencao" 《本草图经》 (A.D 1061 Song Dynasty) states that it "can defeat the drunk .

"Medical Examination" 《医方考》 (A.D 1586 Ming Dynasty) contains "Citronaria chinensis,... hangover, better than kudzu flower. In the future, anyone who is injured in wine and alcohol should use it ".

The combination of Pueraria and Gardeniae has a **synergistic hangover effect!** !

葛根、枳椇子对于解酒功效的协同作用功能评价

何 会, 陈爱丽, 陈伊锴

(上海醒力食品有限公司, 上海 200000)

【摘要】 本文研究了葛根、枳椇子单方及复方不同剂量的解酒效果以及解酒机制。结果显示: 与模型对照组比较, 枳椇子葛根中剂量复方可通过减少乙醇诱导的睡眠时间、降低醉酒率而增强动物对酒精的耐受, 且作用强于其他组, 差异有统计学意义 ($P < 0.05$); 结果显示枳椇子葛根中剂量复方可以明显降低急性酒精中毒小鼠4h血乙醇含量, 差异有统计学意义 ($P < 0.05$), 促进乙醛的生成并降低2 h及4 h血乙醛的浓度, 差异有统计学意义 ($P < 0.05$); 人体呼气乙醇含量检测结果显示, 观察组即枳椇子葛根复方中剂量组酒后60 min的乙醇代谢率与模型对照组相比, 人体内的乙醇代谢了33%, 差异有统计学意义 ($P < 0.05$); 120 min后观察组与模型对照组相比, 乙醇代谢了43%, 差异有统计学意义 ($P < 0.05$), 在本试验条件下, 枳椇子葛根中剂量复方能够降低醉酒小鼠血清中的乙醇、乙醛含量, 降低醉酒率, 能明显加快志愿者酒后的乙醇代谢速度, 说明该配方具有解酒醒酒功效。



Hovenia dulcis-Reduce blood alcohol concentration Prevent liver fibrosis damage

表1 枳椇子和葛根对于急性酒精中毒小鼠的行为学指标的影响 ($n=12, \bar{x} \pm s$)

组别	动物数/n	醉酒数/n	醉酒潜伏时间/min	恢复时间/min
A组: 模型对照组	12	8	27.45 ± 9.06	395.43 ± 84.25
B组: 枳椇子葛根浓缩液低剂量组	12	5	32.86 ± 10.09	342.87 ± 109.41
C组: 枳椇子葛根浓缩液中剂量组	12	2**	49.75 ± 6.72**	253.56 ± 79.73*
D组: 枳椇子葛根浓缩液高剂量组	12	4	44.42 ± 7.75*	289.71 ± 98.05
E组: 枳椇子浓缩液中剂量组	12	4	38.42 ± 7.82	305.62 ± 110.92
F组: 葛根浓缩液中剂量组	12	6	34.37 ± 10.53	337.25 ± 108.27

表2 枳椇子和葛根对于急性酒精中毒小鼠的不同时间点血乙醇含量 ($n=12, \bar{x} \pm s$)

组别	1 h血乙醇浓度mg/100 mL	2 h血乙醇浓度mg/100 mL	4 h血乙醇浓度mg/100 mL
A组: 模型对照组	343 ± 78	332 ± 41	224 ± 59
B组: 枳椇子葛根浓缩液低剂量组	333 ± 65	325 ± 51	213 ± 48
C组: 枳椇子葛根浓缩液中剂量组	335 ± 72	305 ± 58	185 ± 46*
D组: 枳椇子葛根浓缩液高剂量组	352 ± 82	328 ± 64	212 ± 52
E组: 枳椇子浓缩液中剂量组	333 ± 45	324 ± 47	214 ± 26
F组: 葛根浓缩液中剂量组	345 ± 82	318 ± 64	212 ± 34

表4 枳椇子和葛根对人呼气乙醇浓度的影响 ($n=12, \bar{x} \pm s$)

时间	观察组 (mg/100ml)	control (mg/100ml)	P
30 min	29.20 ± 9.71	39.24 ± 13.75	0.023
60 min	25.68 ± 7.22	38.80 ± 16.74	0.015
90 min	23.55 ± 6.60	37.93 ± 13.73	0.004
120 min	20.00 ± 5.12	36.71 ± 12.16	0.001

Hangover cure

Hovenia dulcis extract can reduce the alcohol concentration in alcohol by inhibiting the absorption of ethanol from the digestive tract and accelerating the metabolism of ethanol, thereby reducing the alcoholic effect.

Liver Protection

Hovenia dulcis water extract liquid can enhance the activity of ADH in the liver, increase the activity of glutathione peroxidase, reduce the damage of toxic substances to liver cells, antagonize cell lipid peroxidation, stabilize cell membranes, and resist liver fibrosis

Chinese yam

"Yixueaizhongcanxilu", 《医学衷中参西录》 (A.D.1909, Qing Dynasty) Records" yam solution: "Yam is benetifs to blood circulation;

Compendium of Materia Medica" 《本草纲目》 (A.D 1596) points out: Chinese yam can cure all kinds of damage, treat organs injuries, and go to the head and face to swim ... hard poison can cure.

Yam polysaccharide is the main active ingredient of yam, which has the functions of hangover and liver protection, improve immunity, anti-aging, anti-mutation, anti-oxidation, anti-tumor and hypoglycemia.—

11-14Guan Qianqian, Zhang Wenlong, Du Fangling, et al. Research progress on biological activity and mechanism of yam polysaccharides [J]. China Food and Nutrition, 2018, 24 (3): 11-14(关倩倩,张文龙,杜方岭,等. 山药多糖生物活性及作用机理研究进展[J]. 中国食物与营养, 2018, 24(3):)



Yam-Decrease the concentration of ethanol acetaldehyde and reduce liver cell damage

表 3 山药多糖对醉酒小鼠血清乙醇和乙醛浓度的影响

Table 3 Effects of rhizoma dioscoreae polysaccharide on serum alcohol and acetaldehyde content

组别	乙醇/(mg/mL)	乙醛/(μg/mL)
模型组	2.75±0.31	52.07±16.39
低剂量给药组	2.28±0.45*	39.52±13.71**
中剂量给药组	1.94±0.28**	32.83±12.26**
高剂量给药组	1.87±0.34**	28.67±11.85**

表 4 山药多糖对醉酒小鼠肝脏 AST、ALT、ADH 和 SOD 活性的影响

Table 4 Effects of rhizoma dioscoreae polysaccharide on AST, ALT, ADH and SOD activity in liver of drunk mice

组别	AST/(U/L)	ALT/(U/L)	ADH/(U/mg)	SOD/(U/mg)
空白组	35.14±13.96	31.68±9.16	28.16±4.02	251.38±21.69
模型组	61.49±15.13**	51.28±10.24**	19.07±3.42**	147.27±22.57**
低剂量给药组	54.37±14.21 ^{△△}	46.84±8.56 [△]	24.26±4.65 [△]	186.52±21.63 ^{△△}
中剂量给药组	45.94±13.28 ^{△△}	39.23±8.15 ^{△△}	26.53±3.73 ^{△△}	203.71±18.94 ^{△△}
高剂量给药组	44.62±13.52 ^{△△} ↓	40.76±7.29 ^{△△} ↓	25.25±3.17 ^{△△} ↑	211.26±19.38 ^{△△} ↑

Hangover cure

Yam polysaccharide can **increase the alcohol dehydrogenase activity** and **increase the acetaldehyde dehydrogenase**, promote the decomposition of ethanol and acetaldehyde, thereby reducing the mass concentration of ethanol and acetaldehyde, and reach result of **hangover cure**.

Liver protection

Yam polysaccharide can increase the activity of alcohol dehydrogenase (ADH), superoxide dismutase (SOD) in liver tissue, and reduce the activity of alanine aminotransferase (ALT) and aspartate aminotransferase (AST) in serum, **and reduce the oxidative damage of liver cells**.

Uncomfortable after drunk

"Beilu" 《名医别录》 (A.D 220-450) records that yam has the effect of eliminating annoyance and thirst; yam polysaccharide can significantly prolong drunk tolerance, **shorten sleep time and prevent drowsiness after drunk**.

Anti-alcoholic ingredients prepared by exclusive biological peptide technology **Corn oligopeptide**

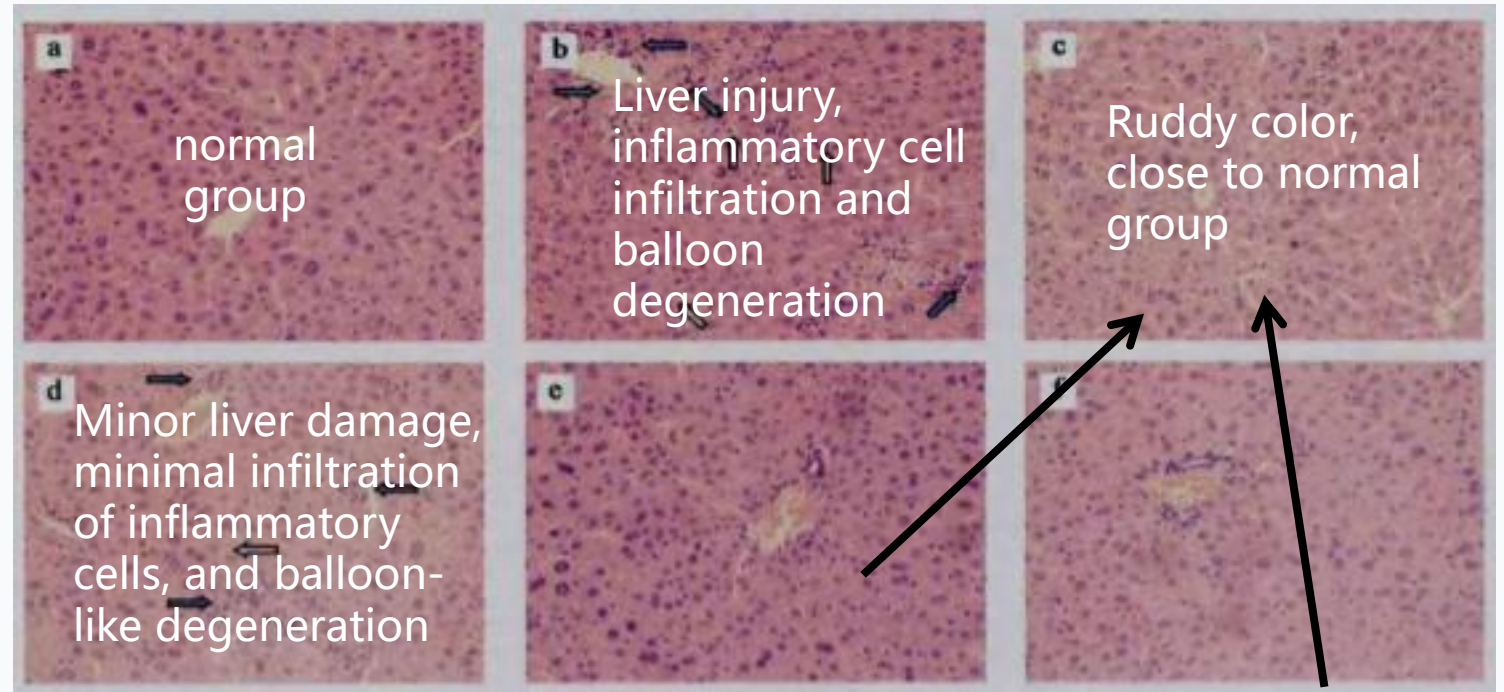
Corn oligopeptide is a protein extracted from natural corn, which is a small molecule peptide processing by directed digestion and specific small peptide separation by exclusive bio-peptide technology.

-Functions-

**Hangover cure liver protection
Antioxidant, anti-fatigue,
lower blood pressure**



- a. normal group
- b. negative control
- c. positive control group
- d. low-dose corn oligopeptide group
- e. medium dose corn oligopeptide group
- f. high dose corn oligopeptide group



Corn oligopeptide

- **Enhances the activity of alcohol dehydrogenase**
 - **acetaldehyde dehydrogenase in the liver**
- **Enhances the ability to catabolize alcohol**
 - **Promote alcohol breakdown**
- **Reduce alcohol damage to liver cells**

Corn oligopeptide - Continuous activation of alcohol dehydrogenase

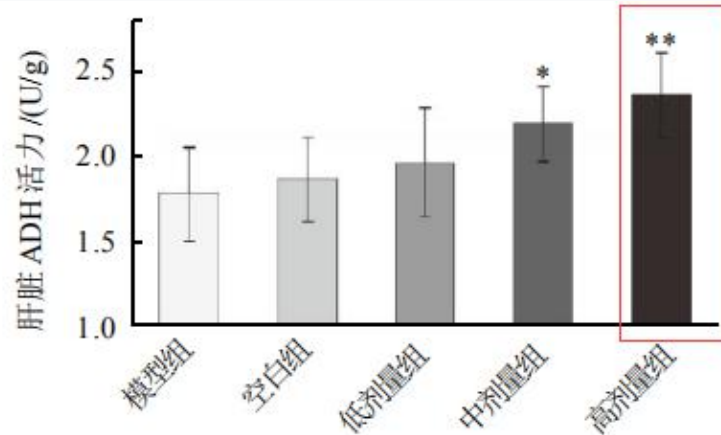


图3 不同剂量玉米肽对小鼠肝脏中 ADH 活力的影响

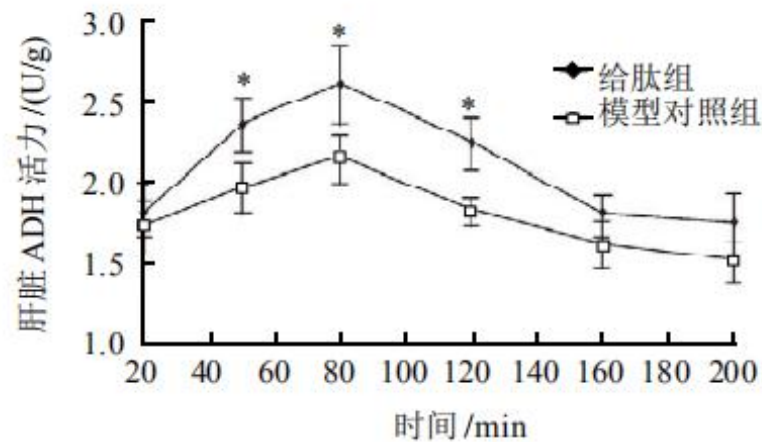


图4 不同时间小鼠肝脏中 ADH 活力的变化

The hangover mechanism of corn oligopeptides is related to its **ability to activate alcohol dehydrogenase (ADH)**, and has a good sustained activation effect and its **higher proportion of alanine (Ala) and leucine (Leu) composition!**

表4 玉米蛋白及玉米肽氨基酸分析 (mol %)

氨基酸	浓缩玉米蛋白	玉米肽	玉米蛋白*	玉米肽*	氨基酸	浓缩玉米蛋白	玉米肽	玉米蛋白*	玉米肽*
Asp	5.66	4.26	5.33	6.49	Met	1.86	1.67	1.81	1.79
Thr	3.55	2.43	3.24	3.55	Ile	3.62	3.34	4.16	2.09
Ser	8.03	7.57	5.34	8.33	Leu	22.37	17.80	15.76	13.41
Glu	7.55	21.61	17.81	20.54	Tyr	3.78	3.578	2.44	3.31
Pro	9.65	10.16	10.64	10.89	Phe	6.08	4.78	4.92	2.58
Gly	3.47	2.62	4.46	4.54	Lys	0.42	0.26	1.47	0.98
Ala	15.84	12.84	14.02	15.81	His	1.36	1.11	1.38	1.12
Cys	1.10	0.81	0.38	0.37	Arg	1.54	1.36	2.09	1.15
Val	4.14	3.82	4.75	3.05	Total	100	100	100	100

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Liver Protection

8 powerful liver protection ingredients

Relieves oxidative stress (prevents liver cell damage), prevents lipid peroxidation (prevents liver fibrosis), inhibits liver inflammation (prevents hepatitis)

"Three-dimensional" liver protection

Polygonatum-Relieves Oxidative Stress: Prevents Hepatocyte Damage

表 2 6 组小鼠血清 ALT 与 AST 测定结果

Tab. 2 Comparison of serum levels of ALT and AST among the 6 groups of mice $U \cdot L^{-1}, \bar{x} \pm s$

组别	小鼠/只	剂量/ $(g \cdot kg^{-1})$	ALT	AST
黄精提取物				
高剂量组	10	15	98.7±24.21 ^{*1*2}	89.3±21.3 ^{*1*2}
中剂量组	10	10	110.8±23.14 ^{*2*3}	71.2±17.47 ^{*1*2}
低剂量组	10	5	127.3±21.78 ^{*3}	105.3±18.35 ^{*1}
阳性对照组	10	0.15	95.1±25.32 ^{*1*2}	87.2±19.25 ^{*1*2}
模型组	10	...	155.3±18.31 ^{*3}	120.4±23.21 ^{*3}
空白对照组	10	...	32.5±10.23	51.5±14.25

表 3 6 组小鼠肝组织 SOD 与 MDA 比较

Tab. 3 Comparison of SOD and MDA in liver tissue among the 6 groups of mice $\bar{x} \pm s$

组别	小鼠/只	剂量/ $(g \cdot kg^{-1})$	SOD/ $(nmol \cdot mL^{-1})$	MDA/ $(U \cdot mg^{-1})$
黄精提取物				
高剂量组	10	15	213.5±23.58 ^{*1}	6.35±1.78 ^{*1}
中剂量组	10	10	204.2±21.19 ^{*1}	6.12±2.14 ^{*1}
低剂量组	10	5	187.2±19.34	8.56±1.74
阳性对照组	10	0.15	201.6±21.37 ^{*1}	5.56±2.01 ^{*1}
模型组	10	...	165.3±18.34 ^{*2}	9.25±1.58 ^{*2}
空白对照组	10	...	235.6±21.21	3.56±1.23



Polygonatum extract can reduce the activity of alanine aminotransferase (ALT), aspartate aminotransferase (AST) and malondialdehyde (MDA) in liver injury mice, and increase the activity of superoxide dismutase (SOD) in liver tissues , **Has a certain protective effect on alcohol-induced acute oxidative stress liver injury!**

Seaberry-Relieves oxidative stress: prevents liver cell damage

沙棘对急性酒精摄入小鼠肝、脑抗氧化系统的影响

Effects of Hippophae rhamnoides L. on liver and brain antioxidant system in mice with acute alcohol intake

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摘要: 目的: 探讨沙棘对急性酒精摄入小鼠肝、脑抗氧化系统的影响。方法: 雄性ICR小鼠60只, 随机分为阴性对照组、酒精模型组和沙棘低、中、高剂量组, 各给药组沙棘剂量为: 0.6、3、6 g/kg bw。连续给药14 d。自第15日起, 每日给药1 h后, 酒精模型组和沙棘各剂量组用40%酒精ig, 15 mL/kg体重, 至第20日结束。取小鼠肝脏和脑组织, 测定还原型谷胱甘肽(GSH)、丙二醛(MDA)、过氧化氢酶(CAT)和总抗氧化能力(T-AOC)的活性或含量。结果: 与酒精模型组相比, 沙棘各剂量组肝脏组织中的GSH含量升高, 低剂量组中的CAT活性升高, 中、高剂量组中的T-AOC活性升高; 低、高剂量组脑组织中的GSH含量升高, 中、高剂量组中的T-AOC活性升高。结论: 沙棘对酒精所致小鼠肝脏和脑组织的氧化应激具有明显的缓解作用。

Hippophae rhamnoides has **obvious relief effect** on alcohol-induced oxidative stress in liver and brain tissues



Mulberries - Relieves Oxidative Stress: Prevents Hepatocyte

桑葚总多糖对对乙酰氨基酚诱导小鼠急性肝损伤的保护作用

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摘要 目的: 研究桑葚总多糖(MFP)对APAP引起的HepG2肝细胞毒性的缓解效应, 探讨MFP对APAP诱导小鼠急性肝损伤的保护作用及可能机制. 方法: 采用MTT法检测MFP对细胞活力的影响, 将32只小鼠随机分为正常组、模型组、MFP低、高剂量组(50, 150 mg · kg⁻¹), 腹腔注射300 mg · kg⁻¹ APAP建立小鼠急性肝损伤模型, 检测血清中谷丙转氨酶(ALT)、谷草转氨酶(AST)和乳酸脱氢酶(LDH)活力, 肝组织中丙二醛(MDA)、还原型谷胱甘肽(GSH)、总超氧化物歧化酶(T-SOD)和总抗氧化能力(T-AOC)水平; 用ELISA测定肝组织中肿瘤坏死因子- α (TNF- α)、白细胞介素-1 β (IL-1 β)和白细胞介素-6 (IL-6)水平; HE染色法观察肝脏组织的病理学变化; 用Western blot检测小鼠肝组织中核因子- κ B (NF- κ B) p65、血红素加氧酶(HO-1)和葡萄糖-6-磷酸脱氢酶(G6PD)的表达水平. 结果: MFP可剂量依赖性地缓解APAP诱导的HepG2细胞死亡($P < 0.01$). 与模型组相比, MFP能显著地降低肝损伤小鼠血清中ALT, AST, LDH水平($P < 0.05$ 或 $P < 0.01$), 下调肝组织中MDA, TNF- α , IL-1 β , IL-6的含量($P < 0.05$ 或 $P < 0.01$), 改善APAP诱导的小鼠肝组织病变. 此外, MFP还能明显上调模型小鼠肝组织中GSH, T-SOD, T-AOC水平($P < 0.05$ 或 $P < 0.01$), 明显下调NF- κ B p65蛋白的表达水平($P < 0.05$ 或 $P < 0.01$), 上调HO-1和G6PD蛋白的表达水平($P < 0.05$ 或 $P < 0.01$). 结论: MFP能保护APAP诱导的小鼠急性肝损伤, 这与增强肝脏抗氧化能力, 抑制肝脏炎症反应有关.

Mulberries - Relieves
Oxidative Stress:
Prevents Hepatocyte



Emblica-relieve oxidative stress: prevent liver cell damage

Protective effect of Eugenzi extract on acute liver injury in mice

余甘子提取物对小鼠急性酒精肝损伤的保护作用研究

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3.昆明医科大学实验动物学部, 云南昆明 650500)

摘要: 研究余甘子提取物 (extractum phyllanthus emblica, EPE) 对小鼠急性酒精肝损伤的预防保护作用 and 机制。方法: 60 只雄性小鼠随机分为空白组、模型组、药物对照组 (美他多辛胶囊-欣立得, 200 mg/kg·d) 和 EPE 高、中、低剂量组 (400、160、80 mg/kg·d), 灌胃给药 30 d, 末次给药后 1 h 灌胃 56% 乙醇造急性酒精肝损伤模型。12 h 后检测血清谷丙转氨酶 (ALT)、谷草转氨酶 (AST)、甘油三酯 (TG)、肿瘤坏死因子 α (TNF- α)、白介素 6 (IL-6)、白介素 10 (IL-10) 浓度, 检测肝脏丙二醛 (MDA)、超氧化物歧化酶 (SOD)、谷胱甘肽过氧化物酶 (GSH-Px)、乙醇脱氢酶 (ADH) 含量, 实时荧光定量 PCR (real time PCR) 检测肝脏脂肪酸合成酶 (FAS)、脂肪分化相关蛋白 (ADRP)、细胞色素 P450 2E1 (CYP2E1)、过氧化酶体增殖激活 α 受体 (PPAR α) 和半胱氨酸天冬氨酸蛋白酶 3 (Caspase3) mRNA 的表达, HE 染色观察肝脏组织病理变化。结果表明: EPE 能显著降低小鼠血清 ALT、AST、TG 浓度, 减轻肝脏病理损伤; EPE 显著提高肝脏乙醇代谢酶 ADH、CAT 活性, 下调 CYP2E1 mRNA 表达水平, 缩短小鼠醒酒时间; EPE 显著下调脂肪酸合成酶 FAS 和转运酶 ADRP 基因表达, 抑制脂肪酸合成和向肝脏转运; EPE 显著提高肝脏抗氧化酶 SOD、GSH-Px 活性, 降低 MDA 浓度, 发挥抗氧化活性保护肝脏损伤; EPE 显著降低炎症因子 TNF- α 和 IL-6 浓度, 减轻肝脏炎症损伤, 但对 IL-10 浓度没有显著影响; EPE 显著下调 Caspase3 基因表达, 降低肝脏细胞凋亡水平; EPE 显著上调 PPAR α 基因表达来减轻肝脏氧化和炎症损伤。结论: **EPE 通过乙醇代谢酶活性调节、脂代谢调控、抗氧化损伤、抗炎和抗细胞凋亡来保护小鼠急性酒精肝损伤** 具有开发为解酒护肝保健食品的前景。

Emblica extract protects mice from acute alcoholic liver injury through **regulation of ethanol metabolism enzyme activity, regulation of lipid metabolism, antioxidant damage, anti-inflammatory and anti-apoptosis.**



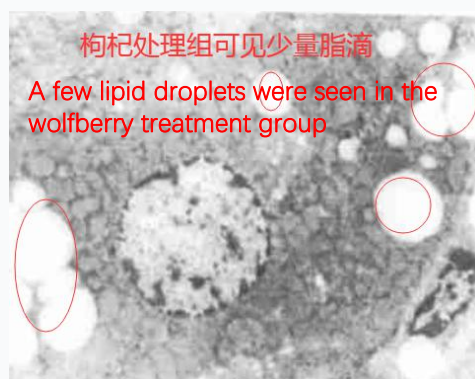
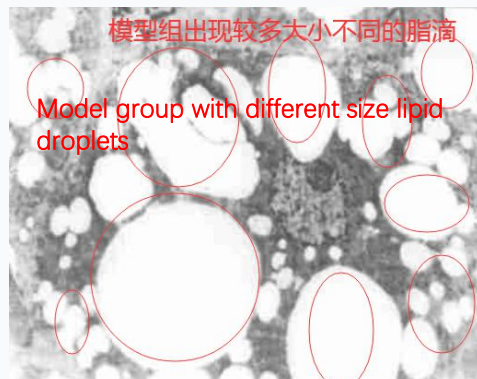
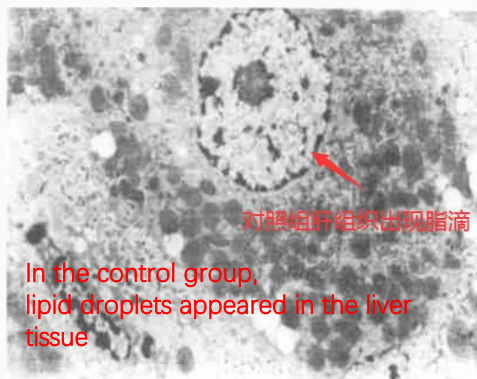
Wolfberry-Anti-lipid peroxidation : Prevent liver fibrosis

Experimental Study on the Protective Effect of Lycium Barbarum on Rats with Alcoholic Liver Injury
枸杞对酒精性肝损伤大鼠保护作用的实验研究

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摘要:目的 观察宁夏枸杞对酒精性肝损伤大鼠的保护作用。方法 选择成年雄性SD大鼠60只,体重300~340g,随机分为四组:空白对照组每天给予蒸馏水灌胃,喂饲基础饲料;其余三组按10mL/(kg·bw)剂量给予56度白酒灌胃,酒精模型组喂饲基础饲料;低剂量枸杞组:喂饲基础饲料+枸杞(50g/kg);高剂量枸杞组:喂饲基础饲料+枸杞(100g/kg),喂饲3周,实验期末,空腹12h,20%乌拉坦麻醉后,心脏取血制备血清及10%肝组织匀浆,测定谷丙转氨酶(ALT)、超氧化物歧化酶(SOD)、过氧化氢酶(CAT)、丙二醛(MDA)、总抗氧化能力(T-AOC),并取肝组织病理切片检查。结果 与酒精模型组比较,枸杞组肝脏SOD、CAT活性均高于酒精模型组,差别有统计学意义($P < 0.01$);枸杞组血清ALT活性低于酒精模型组,差别有统计学意义($P < 0.01$);枸杞组血清、肝脏中MDA含量均低于酒精模型组,差别有统计学意义($P < 0.05$);肝组织病理结果提示宁夏枸杞对酒精性肝损伤大鼠具有保护作用。结论 宁夏枸杞对酒精性肝损伤大鼠具有抗脂质过氧化及保护肝细胞的作用。

Wolfberry has **anti-lipid peroxidation effect** on alcoholic liver injury, **prevents lipid degeneration of liver cells,** **reduces organelles,** and **causes liver fibrosis!**



Cassia-Anti-lipid peroxidation: prevents liver fibrosis

决明子总蒽醌对酒精性脂肪肝大鼠肝组织脂质过氧化与 PPAR- γ 表达的影响

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【摘要】 目的: 研究决明子总蒽醌对酒精性脂肪肝大鼠肝组织脂质过氧化与 PPAR- γ 表达的影响。方法: 采用 SD 大鼠每天 2 次灌胃给予乙醇, 连续 3 个月, 建立酒精性脂肪肝大鼠模型。将动物分成 6 组, 造模同时分别灌胃给予决明子总蒽醌低、中、高剂量和凯西莱组, 模型组和正常对照组每天灌服等容量的生理盐水。末次给药后分别检测血清谷丙转氨酶 (ALT)、门冬氨酸氨基转移酶 (AST)、碱性磷酸酶 (AKP)、甘油三酯 (TG)、总胆固醇 (TC)、高密度脂蛋白 (HDL-C)、低密度脂蛋白 (LDL-C)、丙二醛 (MDA)、超氧化物歧化酶 (SOD)、游离脂肪酸 (FFA) 含量; 肝组织匀浆检测 TG, TC, MDA, SOD, FFA, 肝脂酶 (HL) 和脂蛋白脂酶 (LPL); 取肝左叶分别用于病理检查观察显微结构变化, RT-PCR 和免疫组化检测 PPAR- γ mRNA 和蛋白表达。结果: 决明子总蒽醌对酒精性脂肪肝模型大鼠血清转氨酶 ALT, AST 和血清脂质 TC, TG 升高有明显降低作用, 对血清 MDA 升高有明显降低作用, 对血清 SOD 活性降低有明显升高作用; 对肝组织 TC, TG, FFA 升高有明显降低作用, 而对 HL, LPL, SOD 活性降低有明显升高作用。病理组织学检查显示, 各给药组脂肪变性和炎症反应程度均较模型组有一定的减轻。RT-PCR 和免疫组化结果显示, 模型组大鼠肝组织 PPAR- γ mRNA 和蛋白表达与正常对照组比较显著降低 ($P < 0.01$)。决明子总蒽醌和凯西莱组对酒精性脂肪肝模型大鼠肝组织 PPAR- γ mRNA 和蛋白表达降低有明显升高作用 ($P < 0.01$)。结论: 决明子总蒽醌可能通过调节脂肪代谢、改善肝脏功能、抗脂质氧化作用和增加 PPAR- γ mRNA 和蛋白的表达, 而具有预防酒精性脂肪肝发生的作用。

Cassia may **prevent alcoholic fatty liver** by regulating fat metabolism, improving liver function, **anti-lipid oxidation** and increasing expression of PPAR- γ (peroxisome proliferator-activated receptor) mRNA and protein.



Chrysanthemum-Inhibiting liver inflammation: preventing hepatitis

表 1 野菊花不同萃取部位对免疫性肝损伤小鼠血清中 ALT、AST、IFN- γ 和 TNF- α 水平的影响 ($\bar{x} \pm s, n = 8$)

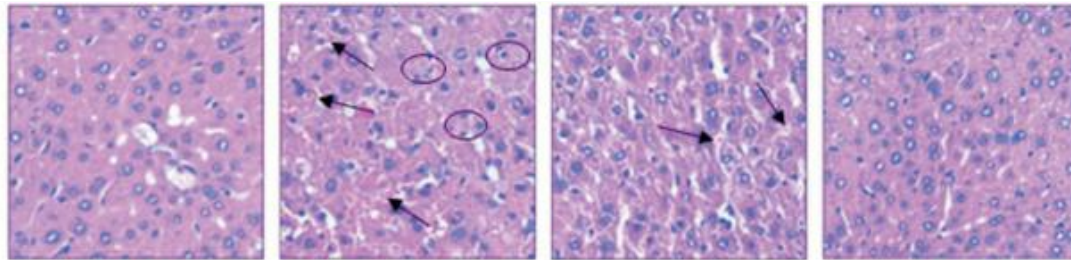
Table 1 Effects of different extracts from CIF at various concentration on levels of ALT, AST, IFN- γ , and TNF- α in serum of mice with ILI ($\bar{x} \pm s, n = 8$)

组别	剂量 / (g·kg ⁻¹)	ALT / (U·L ⁻¹)	AST / (U·L ⁻¹)	IFN- γ / (ng·L ⁻¹)	TNF- α / (ng·L ⁻¹)
对照	—	19.24 ± 4.58	18.71 ± 4.97	131.79 ± 10.30	144.58 ± 4.60
模型	—	55.17 ± 4.63 ^{△△}	70.09 ± 4.50 ^{△△}	165.27 ± 6.57 ^{△△}	171.41 ± 5.52 ^{△△}
CIF-A	0.5	50.10 ± 8.99	63.65 ± 8.08	190.32 ± 28.52	160.43 ± 5.18
	1.0	41.01 ± 8.87*	28.73 ± 5.76*	177.63 ± 11.02	140.61 ± 2.76*
	2.0	37.37 ± 10.49*	23.35 ± 7.41*	171.16 ± 8.96	133.21 ± 6.47*
CIF-B	0.75	52.57 ± 6.25	65.21 ± 6.04	156.69 ± 3.51	150.63 ± 7.99*
	1.5	36.90 ± 5.58*	49.81 ± 6.85*	158.45 ± 11.16	153.52 ± 8.58*
	3.0	25.68 ± 4.25*	19.76 ± 4.34**	164.31 ± 6.33	148.01 ± 7.46*
CIF-C	1.0	49.87 ± 4.98	49.15 ± 8.39*	154.92 ± 12.15	157.76 ± 2.65*
	2.0	36.48 ± 8.95*	32.45 ± 8.11**	127.65 ± 13.07*	149.55 ± 8.50*
	4.0	25.57 ± 5.69*	22.24 ± 7.51**	123.36 ± 6.03*	148.04 ± 9.35*
联苯双酯滴丸	0.15	20.59 ± 7.46**	19.68 ± 3.66**	177.77 ± 12.37	153.79 ± 4.99*

炎症因子

显著下降!

The terpenoids and flavonoids in chrysanthemum have a certain hepatoprotective effect on immunological liver injury induced by concanavalin A (Con A) in mice, which can reduce the phenomenon of liver infiltration inflammation!



正常组

模型组

低剂量组

高剂量组

箭头指向肝组织出血点, 圆圈圈出炎性细胞浸润现象



Brain Refreshing ingredients

L-theanine

Brain Refreshing Amino Acid - L-theanine

Studies have shown that daily intake of 50 mg of theanine increases alpha-brain waves, and alpha-brain waves can help us **achieve mental relaxation and maintain a flexible mind.**



PART 3

Product Benefits

WHOLISTIC WELLNESS LIMITED

Exclusive fermentation technology to double the activity !

Studies have shown that the anti-alcoholic and liver-protecting raw materials are prepared into enzymes through **complex enzymatic hydrolysis** and **microbial transformation**, which can **retain and effectively release their natural active ingredients**, while **generating beneficial active secondary metabolites**, making the **activity stronger and better!**

The results showed that the enzyme raw material control had a 7-fold increase in puerarin content, a 3-fold increase in brass content, a 3-fold increase in amino acid content, an 80 ml / L increase in multiple servings, and an 92% increase in antioxidant capacity. All are indicators related to accelerating alcohol metabolism and protecting the liver.

一种具有潜在解酒护肝功能酵素的开发及其生物活性评价

Development of a Potential hangover cure and Liver-protecting Enzyme and Evaluation of Its Biological Activity

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摘要: 文章以明确报道的具有解酒护肝功效的葛根、葛花、丹参等药食同源材料为原料, 经复合酶酶解和鼠李糖乳杆菌217-8发酵制备成酵素, 对其黄酮、葛根素、多酚等活性成分含量及总抗氧化能力进行检测。结果表明, 该酵素与原材料对照, 其葛根素含量提高了7倍, 黄酮含量提高了3倍, 氨基酸含量提高了3倍, 多酚含量提高了80 mg/L, 抗氧化能力提高了92%, 以上指标均是与加速酒精代谢及保护肝脏相关的指标。因此, 优选并配伍的葛根、葛花、丹参、山楂、云茯苓等药食同源原料经复合酶解和微生物转化制备成酵素, 可将其天然活性成分完整保留并有效释放, 同时产生有益活性次级代谢产物, 具有潜在的解酒护肝功能。

To strive for perfection

Only For your Health

Chemical products	Various products	ZendZing phytoalexin
Chemical hangover effect is obvious But mostly stimulants cand cause harm to the human body Especially damage to liver and kidney	Single component Slow absorption Slow hangover effect Also not suitable for long-term drinking	Extraction from natural raw materials Simulate liver hangover principle Good hangover effect Quick results No side effects Health care

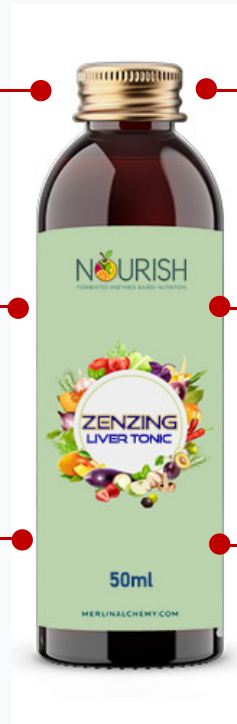
Drinking Essentials **Hangover Relief**

Good partner for hangover and liver protection

Rejuvenating and revitalizing factor effectively relieves drunken brain and flushing, etc.

9-component "three-dimensional" three-dimensional liver protection, all-round care for your "baby liver"

Relieves tiredness the next day after drinking

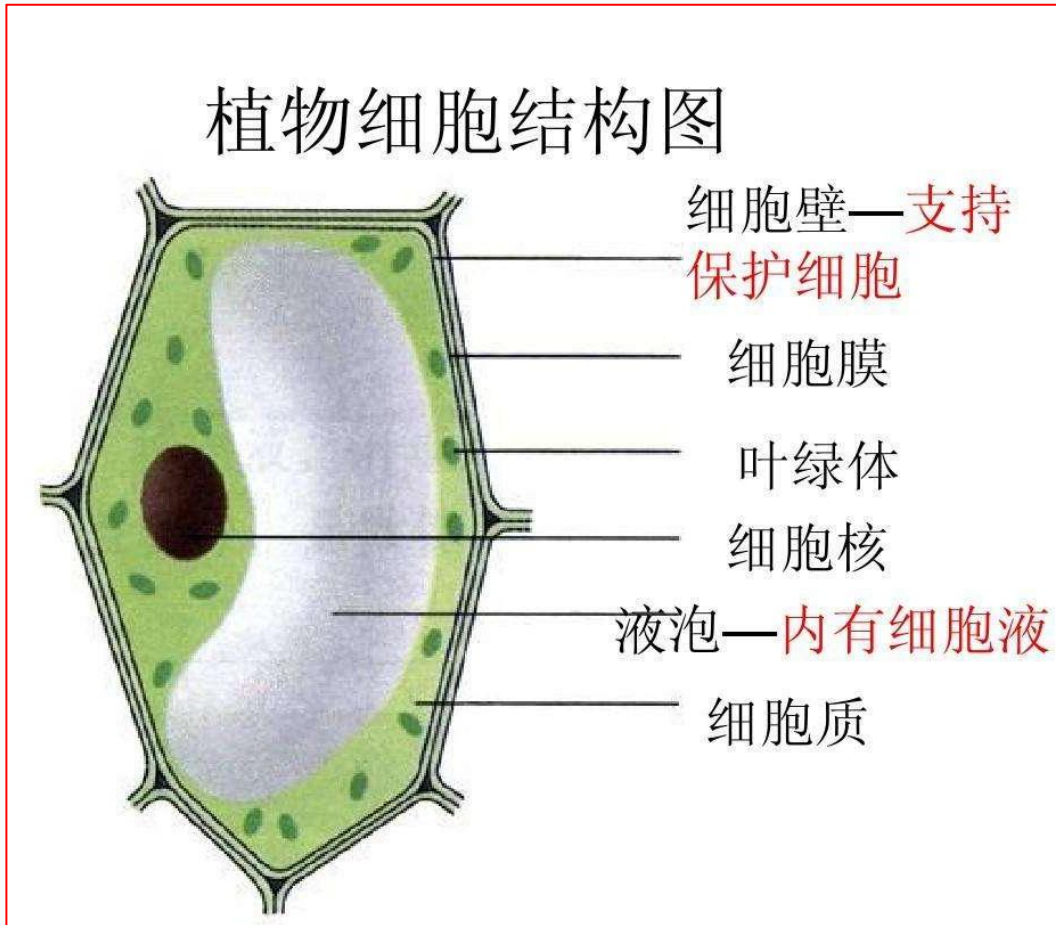


Significant increase in alcohol consumption

5 major hangover ingredients

Effectively relieves fever, nausea, fatigue, lethargy, and dizziness after drinking

Biological enzymolysis and low temperature wall breaking technology



Maximum retention of activity

Biological enzymolysis, low temperature operation, mild conditions, maximum retention of active substances

Tailor-made

Choose different enzymes and enzymatic conditions according to different Chinese medicine ingredients

Solving legacy issues

Solve the problems of difficult to release active factor from Chinese medicine materials and incomplete extraction

Bio-enzymatic wall-breaking technology completely breaks down traditional Chinese medicine cells and releases effective molecules

Patented extraction technology

Patented extraction equipment, the extraction rate of medicinal molecules can reach 100%

Targeted screening microbial fermentation technology

Traditional Chinese medicine is not thoroughly fermented by common bacteria, and the effect is not ideal. ZendZing Fermentation Strains use directional screening technology, with the **diversity of fermentation products** and the **improvement of the formula's efficacy** as tracking indicators

Finally, the Chinese medicine fermentation use-**specific strains with exclusive competitive advantages** were screened out-Lactobacillus plantarum YYS-06, S.and thermophilus YYS-012

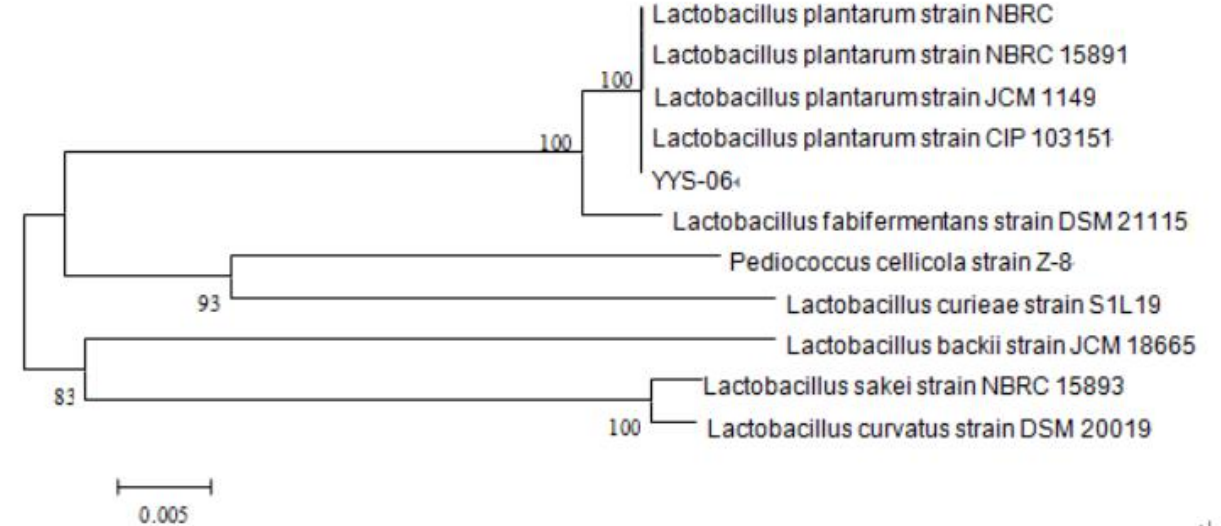
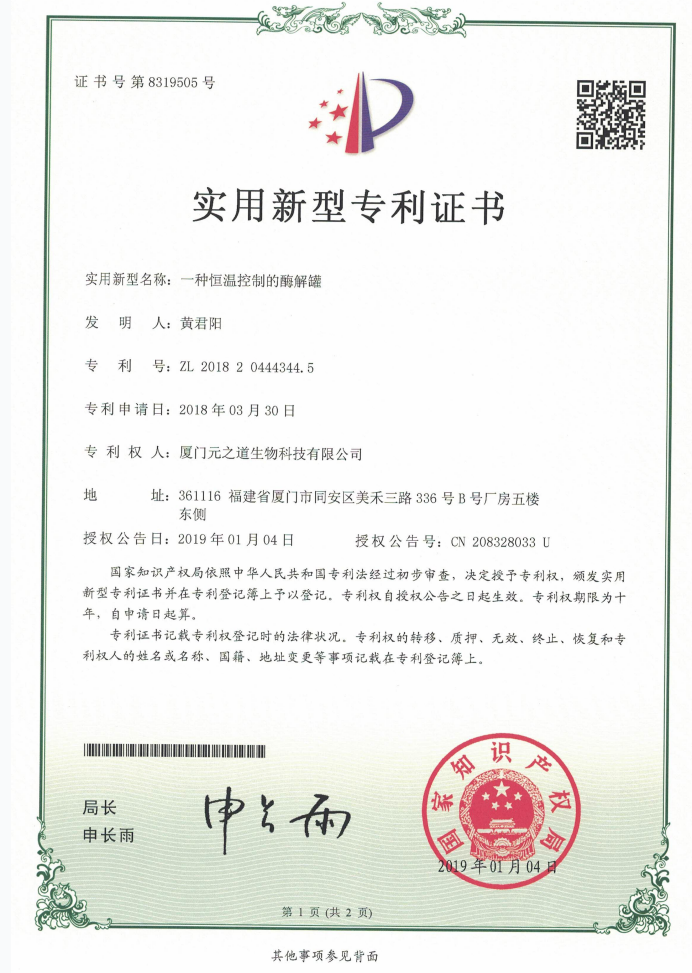
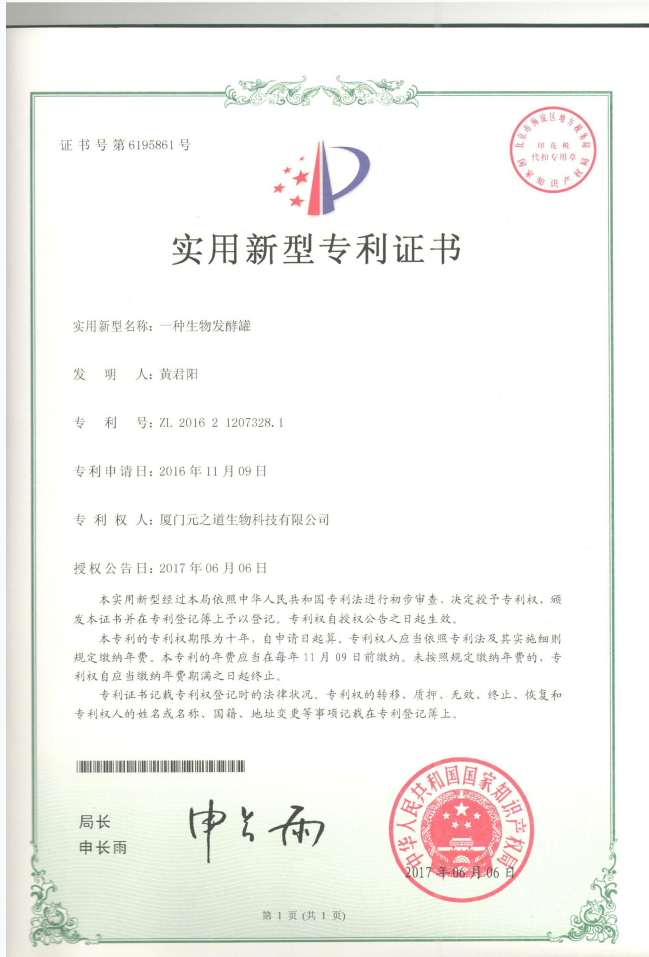


图 1

Patented fermentation, extraction and enzymolysis technology, greatly improving the formulation effect



Why Choose ZendZing Hangover Cure ?





- Modern technology ferments more than ten kinds of medicinal and food homologous herbs, biological enzymolysis technology breaks the wall at low temperature, and the functional ingredients are completely released;
- 5 powerful anti-alcoholic factors + 8 liver protection ingredients "three-dimensional" three-dimensional liver protection
- Directional screening of microbial strains, exclusive constant temperature multi-stage continuous fermentation, to improve the effect and reduce toxic and side effects
- Puerarin, phytoflavones, corn oligopeptides and other ingredients increase the activity of alcohol dehydrogenase and acetaldehyde dehydrogenase, promote alcohol catabolism, and relieve hangover and discomfort after drinking;
- Mulberry polysaccharide protects liver cells from being damaged by alcohol, and promotes liver cell repair and regeneration;
- In vitro alcohol decomposition experiment, the effect is perfectly displayed

ZENZING

for better liver health

