



## Design of three herbal recipes for glaucoma and tired eyes I. how to prepare a beer containing 15 herbal extracts

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### Abstract

The blood supply of eyeball is mainly depending on a very thin central retinal artery and circulate back to the small vein, both of them are located in the center of the ocular nerve cord at the back of the eyeball, which is rather similar to a cherry fruit attached to a tiny stalk. It is an unreasonable design for our eye nutritional supply. The very thin central retinal artery with the diameter less than 1/5 mm is too heavy a burden to transport oxygen and nutrients to keep a well maintenance of the delicate retina, especially the excessive radiation damage of the eyes in the computer era. When the aged process goes on and the malnutrition status happen, such that high fatty food diet and wastes deposition onto the capillaries, that may cause blood vessels having micro-capillary clots forming, which is a subclinical blockage or narrowing of the diameter of those small arteries, veins and micro capillaries, etc., that are difficult to detect. Although the currently clinical methods for curing glaucoma using eye drops and surgery to reduce the intra ocular pressure are in practice, it might be even more important to concern how to improve a good microcirculation of eyes. Many traditional Chinese herb medicines had practiced through thousand years and verified to have good effects on blood circulation and they are beneficial to eye-health. Small amount of alcohol, but not over dose, may help blood vessel relaxation. Hop in beer is a good antioxidant, which eyes are welcome. This is a try to formulate a DIY 15-herb extract enhanced beer to test if that drink could become an extra helper in healthy eye maintenance or glaucoma progress reducing method.

**Keywords:** Herb, beer, glaucoma, AMD, eye, saffron, Pilsner Urquell

### Introduction

After extensive read and digestion of both the English and Chinese literature related to the treatment of glaucoma and age-related macula degeneration, I published an article: <Use Three Herbal "Bullets" to Shoot Glaucoma>. [1] In that paper I stated: *"the central retinal artery is 163  $\mu$ m in diameter. It is so narrow a neck like a sand-timer that can't let enough blood flow to nourish the delicate retina cells. The retinal blood flow was 38.1  $\mu$ l/min. That means approximately 0.038 ml/min, or 54.72 ml/day. If the average blood volume of an adult is 5,000 ml, use 5,000 divided by 54.72 ml/day, it produces 91.37 days."* That means in order to let the nutrients you absorbed from foods, evenly distributed in your whole blood, you need almost to wait three months.

Don't think that everything in our body is naturally reasonable. The retina of the eye is one of the highest energy users and oxidation required tissue. But, the whole eyeball blood supply is mainly depending on a very thin central retinal artery and circulate back to the small vein, both of them are located in the center of the ocular nerve cord at the back of the eyeball, which is rather similar to a cherry fruit attached to a tiny stalk. I feel it an unreasonable design for our eye nutritional supply. The very thin central retinal artery of the diameter less than 1/5 mm is too heavy a burden to transport oxygen and nutrients to keep a well maintenance of the delicate retina, especially the excessive radiation damage of the eyes in the computer era. So, when the aged process goes on and the malnutrition status happens, such that high fatty food diet and wastes deposition onto the

capillaries, that may cause blood vessels having undetectable micro-capillary clots forming, which is the subclinical blockage or narrowing of the diameter of those small arteries, veins and micro capillaries, etc. So, to help a good microcirculation could be more important than to the use of eye drops alone in order to suppress the intra ocular pressure.

Here I propose a home-made beer containing 15 herbs, which may help to the improvement of blood circulation and eye nutrition, thus to restore retinal cells' vitality and normal function. The English and Chinese names of those herbs and their amount used are listed below.

### 2. Materials used

#### One aroma oil

Boswellia extracted oil (乳香精) 1 ml

#### Two leaves

(Dragon Well) Green tea (龍井茶) 21 g

Lotus leaf (The leave of the *Nelumbo nucifera*, 荷葉) 20 g

#### Three roots

Ginseng root (人參) 10 g

Salvia root (丹參) 16 g

Turmeric (薑黃) 16 g

#### Four seeds

Wolfberry (Go Ji berry, 枸杞子) 20 g

Schisandra seeds (五味子) 6 g (using 0.05 g baking soda to reduce its acidic)

Semen Cassiae (决明子) 20 g

Gardenia jasminoides (黄栀子) 10 g

#### Five flowers

Saffron (藏红花) 3g

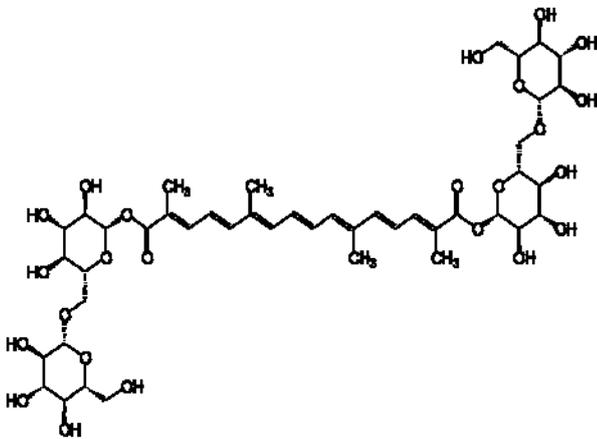
Panax notoginseng flower (三七花) 16 g

White chrysanthemum (白菊花) 16 g

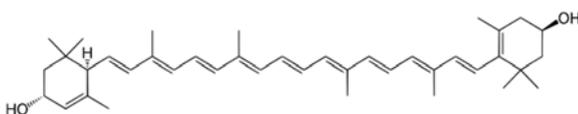
Coreopsis tinctoria (snow chrysanthemum, 雪菊) 16g

Dandelion flower (蒲公英花) 10 g

The reason why I select those herbs is that each herb at least has one or more functions to add benefit to the eye, either it can dilate the blood vessels, increase the blood flow, or, it can cause the brightening of the vision, or, to nurse the neuron, or, it is good for the heart, or, it has the ability of scavenging free radicals, or, it can kill bacteria or mold and enhance immune system, or, it can decrease pain and increase wound-healing. I will not cite literature of individual herbs. People can easily search their English names through <http://google.com>, or, the Chinese names through <http://baidu.com>. Among those herbs, it is worthy to give few citation to saffron, <sup>[2, 3]</sup> and Gardenia jasminoides. Saffron contains crocin, <sup>[4]</sup>



Which is in yellow color and is water soluble. Crocin has many double bonds like lutein.



Lutein is needed by macula but lutein is difficult to be dissolved in water. I guess that crocin is easier to be transported in blood than lutein and its double bonds can mimic lutein in retina for free radical damage protection. Thus, I use those herbs.

#### 3. Preparation Procedure

All of 15 herbs above were cut to small pieces if necessary, such that lotus leave, and crash them to smaller size in a crusher through several grouped operations. Mix them well. The total weight is about 200 g. Stuff them in 5~7 of large Japanese empty tea bags (Daiso brand, 11.0x10.5 cm) and follow the instruction for self-sealing. Then, those herb tea bags were put in a porcelain jar (Out diameter and height are about 12x17 cm, with a rubbering sealing lid). Pour 400 ml of “EVERCLEAN” 190 proof grain alcohol (= 95% alcohol concentration) (See figure 1.) in to that jar, soaking for several hours. That procedure can kill most of bacteria. Then, after the completing the sterilization, transfer the wetted tea bags and the liquor into a stainless bowl. Wash the jar with spring water to get rid of debris. Put back the wetted herb tea bags into the jar. Filter the liquor, which had turned into brownish tea color, passing through a coffee-maker nylon filter. Measure the volume of that liquor and add more “EVERCLEAN” alcohol to it to bring back the total amount of 400 ml. Pour that alcohol back to the jar and further extraction for 3~7 days, with occasionally swirling the jar. The color of the extract is showing in Figure 2 and 3. Store it in a refrigerator. Since the density of the concentrated alcohol is lower than the water, the sediment of fine particles is easier to form, leaving a dark brown herb-alcoholic extract for future use.



Fig 1: A photo of one bottle of “EVERCLEAR” 190 proof grain alcohol (= 95% alcohol concentration), which is available at the Total Wine Store. It is used for both sterilization of herbs and extract biological effective components. Be careful that you must not use industrial grade absolute alcohol. It might contain methanol, which is very harmful to retina.



Fig 2: The color of the 15-herb extract. Because it is very concentrated, the color looks like dark brown. However, as one can see the stain on

the upper part of the inner glass wall, the color is brownish yellow, which was caused mainly by the saffron, gardenia, wolfberry and chrysanthemum extracts. That yellow color could be what retina needs.



**Fig 3:** The color of the 15-herb extract, as it is shown on the inner glass wall after the extract was poured out. Compare with Fig 2.



**Fig 4:** A box of Pilsner Urquell. It contains 12 bottles of 330 ml beer, which can be purchased from Total Wine Shop.



**Fig 5:** A bottle of Pilsner Urquell beer made in Czech. It contains 330 ml beer, which has good quality and won the reputation as the king of beers.



**Fig 6:** The cup in the left contains 100 ml of Pilsner Urquell beer. The cup in the right contains 100 ml of Pilsner Urquell beer plus 2 ml of 15-herb extract. The latter one is less transparent with slightly yellowish bubbles floating on the surface.



**Fig 7:** That cup contains 100 ml of mineral water plus 2 ml of 15-herb extract. It has lovely golden color. People who don't like to drink beer can drink that kind herb tea. Its alcohol concentration is very low.

#### 4. Usage

Select the brand of beer that you preferred to drink. Add the 15-herb alcoholic extracts in the amount of 10 to 20 ml to every 500 ml of beer. The beer I selected is Pilsner Urquell (See figure 4 and 5.) To a bottle of 300 ml beer you can add 6 ml of herb extract. Mix it well and drink it. Figure 6 to 7 are photos of beer, beer plus herb extract and herb extract in water. See description in the legend. It is said that small amount of beer can relax blood vessel and increase blood flow. But, constant and over dosage beer drink may harm to the circulation system. The hop flower in the beer is a kind of antioxidant and bacteria preventer, which may be good for eyes as well. In case that people don't want to use alcoholic drinks, then, he/she may use mineral water to replace the beer and get an herbal tea (Fig. 7.). Honey or sugar or sweetener may be added to that herbal tea, as he/she prefers. Pregnant and breast-feeding women, and people allergic to any mentioned herb shall not use that drink. It is users' risk to try making and drinking that kind of beer or tea. For commercial

production according to Gao's recipe or its modification must contact with the author in advance.

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