

APPENDIX III: CHINESE MEDICINE HERBS AND FORMULAS

Composition of Herbal Therapies

Capillaris Combination (plus blood cooling and toxin resolving herbs)

- Artemisiae capillaris, Gardeniae fructus, Rhei rhizoma, Desmodii herba, Paeoniae rubra radix, Polygoni cuspidati, Plantaginis herba, Polyporus umbellatus, Scutellariae radix, Turmeric radix, Glycyrrhiza uralensis fisch

Modified Formulas of Bupleurum and Tang-keui Formula, and Bupleurum and Peony and Six Major Herb Combination

- Bupleuri radix polyporus, Poria (Hoelen), Atractylodes rhizoma, Paeoniae alba radix, Urantii fructus, Fructus oryzae germinatus, Fructus hordei germinatus, Endothelium corneum gigeriae galli, Fructus citri sarcodactylis, Glycyrrhiza uralensis fisch

Modified Glehnia and Rehmannia Formula

- Paeoniae alba radix, Aurantii fructus, Angelicae radix, Rehmanniae radix, Ophiopogonis radix, Fructus lycii, Glehniae radix, Cortex moutan radices, Fructus meliae toosendan, Ligustri fructus, Polygoni multiflori radix, Zizyphi spinosi semen

Modified Aconite, Ginseng, and Ginger Combination, and Gardenia and Hoelen Formula (Four Major Herb Combination and Rehmannia Eight Formula)

- Aconiti praeparata raix, Cinnamomi ramulus, Zingiberis rhizoma, Atractylodes rhizoma, Dioscoreae batatis rhizoma, Polyporus, Poria (Hoelen), Polyporus umbellatus, Alismatis rhizoma, Arecae pericarpium, Glycyrrhiza uralensis fisch

Modified Persica and Achyranthes Combination, and Persica and Cinidium Combination (Persica and Eupolyphaga Combination)

- Carthami flos, Persicae semen, Cortex moutan radices, Aurantii fructus, Leonuri herba, Cyperi rhizoma, Turmeric radix, Rhei rhizoma, Angelicae radix, Cnidii rhizoma, Rehmanniae radix, Paeoniae rubra radix, Achyranthis radix, Citri aurantii fructus, Bupleuri radix, Glycyrrhizae radix, Platycodi radix

AI #3 Capsule

- Mucunae caulis, Sargentodoxae caulis, Paederiae caulis

Allicin Capsule

- Allii sativum bulbus (garlic)

BM Capsule

- Momordica charantia, Fagopyrum tatarium

Capillaris Combination

- Artemisiae capillaris herba, Gardeniae fructus, Rhei rhizoma

Circulation No. 1 Capsule

- Carthami flos, Persicae semen, Angelicae radix, Cnidii rhizoma, Rehmanniae radix, Paeoniae rubra radix, Achyranthis radix, Citri aurantii fructus, Bupleuri radix, Glycyrrhizae radix, Platycodi radix

Coptin Capsule

- Coptis chinensis franch

Cordyceps Capsule

- Cordyceps sinensis

Gall No. 1 Capsule

- Bupleuri radix, Artemisiae capillaris herba, Desmodii herba, Taraxaci herba, Gardeniae fructus, Saussureae radix, Citri pericarpium, Citri immaturi pericarpium, Salviae miltiorrhizae radix, Angelica radix, Scutellariae radix, Gentianae radix

Ginseng and Atractylodes Formula

- Ginseng radix, Dioscoreae rhizoma, Dolichoris album semen, Coicis semen, Nelumbinis semen, Atractylodis macrocephalae rhizoma, Poriae alba, Glycyrrhizae radix, Amomi fructus, Platycodi radix, and Zizipi jujubae fructus

Glycyrrhizin Capsule

- Glycyrrhiza uralensis fisch (licorice root)

Hepa Formula No. 2 Capsule

- Schizandrae fructus, Artemisiae capillaris herba, Alismatis rhizoma, Polyporus, Poria (Hoelen), Atractylodes rhizoma, Cinnamomi ramulus, Citri pericarpium, Magnoliae cortex, Zingiberis rhizoma (ginger), Glycyrrhizae radix (licorice)

HerbSom Capsule

- Corydalis yanhusao rhizoma, Zizyphus spinosi semen, Schizandrae fructus

Ligustrin Capsule

- Ligustrum lucidum ait

Red Poeny Combination

- Paeoniae rubra radix, Puerariae radix, Salviae miltiorrhizae radix, Persicae semen, Artemisiae capillaris herba, Aristolochiae fangchi radix

Rhubarbin Capsule

- Rhei rhizoma

Tiao Ying Yin

- Angelicae radix, Cnidii rhizoma, Paeoniae rubra radix, Rhei rhizoma, Polyporus, Poria (Hoelen), Corydalis yanhusao rhizoma, Dianthi herba, Zedoariae rhizoma, Mori radices cortex, Leonuri fructus, Arecae pericarpium

Pharmacology of Herbs and Formulas

The following list of the pharmacology of the major herbal remedies is for reference only. If you choose to take any of these herbal remedies, it may be helpful to provide your western healthcare provider with this information. It will help your doctor better understand what you are taking and how it may interact with other treatments he or she is prescribing.

Herbs

ALLICIN

- Allicin has a wide spectrum of anti-infectious capabilities.
- It acts against bacteria, mycobacteria, fungi, protozoa, and certain viruses.

- It is potent enough to be used in many common infections such as bacillary dysentery, amebic dysentery, deep fungal infections, whooping cough, endobronchial tuberculosis, oxyuriasis (pinworms), trichomonas vaginitis, and others.
- It has been used in China for more than 20 years.
- It is virtually nontoxic. Its LD50 is 134.9 times higher than the therapeutic dose.

ARTEMISIAE CAPILLARIS THUNB HERBA

- This is the main herb used to treat jaundice in TCM.
- It fosters bile secretion in both healthy and carbon tetrachloride liver damaged animals.
- It has liver protective effects.
- It reduces carbon tetrachloride-induced liver damage and ALT elevation. It also helps recover liver glycogen and RNA.
- It lowers blood lipids and has fibrolytic effects.

ASTRAGALI RADIX

- Astragalosides is the main active ingredient of Astragali Radix.
- It has extensive pharmacological actions and beneficial effects on regulating immunity, antiviral effects, cardiovascular system protection, anti-neoplastic actions, and anti-inflammatory effects.
- Its liver protective and antifibrosis actions can be used for treating fibrosis in chronic liver disease. An experimental study found it can suppress hepatic stellate cell proliferation and the synthesis of collagens.^{1,2}

BUPLEURI RADIX

- Bupleuri radix has liver-protective and biliary effects.
- It can protect the liver from toxic damage caused by galactosamine, Penicillium notatum, and carbon tetrachloride.
- It can increase bile secretion and the amount of bile salt in the bile.
- Its anti-inflammatory effect can be used to treat inflammation of the liver and gall bladder.

COPTIS CHINENSIS FRANCH

- Coptis chinensis franch has antimicrobial properties.
- It can strongly suppress Staphylococcus aureus, Streptococcus, pneumococcus, Vibrio comma, anthrax bacillus, Bacillus dysenteriae, hay bacillus, pneumobacillus, Bacillus diphtheriae, Bordetella pertussis, Brucellaceae, and Mycobacterium tuberculosis.
- It can suppress influenza viruses and Newcastle disease virus in vitro.
- It can act against ameoba, Chlamydia trachomatis, trichomonas, and Leptospira.
- It is virtually nontoxic. The LD50 is 205mg/kg.

CORDYCEPS CAPSULE (CORDYCEPS SINESIS)

- The various actions ascribed to Cordyceps sinesis are lung and kidney nourishment, vital essence and energy tonification, hemostasis, and phlegm resolution.
- It is used in general debility after sickness, and for elderly persons.
- Its therapeutic effects have been confirmed in many controlled, well-designed studies carried out by medical schools in China including Beijing, Shanghai, and Nanjing.

- It is virtually nontoxic.
- The effects of this herb have been studied in chronic viral hepatitis. The efficacy rate was reportedly above 80% in a 256 patient clinical study. *Cordyceps sinensis* can lower ALT, improve liver function, relieve liver related symptoms, and increase albumin. It has also been used for cirrhosis caused by chronic viral hepatitis. In the previously mentioned study, 17 out of 22 patients had increased albumin levels after three months of treatment. Twelve of 17 patients with ascites experienced complete resolution while the other five had a reduction in ascites.³
- This herb is helpful for immunodeficiency caused by viral infection, chemotherapy, radiotherapy, major illnesses, or surgery.
- *Cordyceps sinensis* is used to treat impotence, premature ejaculation, low libido, low sperm counts and/or activity, irregular menstruation, and leukorrhea.
- Observed in a rat CCl₄ fibrotic model, *Cordyceps sinensis* treatment led to less inflammation, fatty degeneration, and liver cell damage. From clinical observations, *Cordyceps sinensis* appears to improve regeneration of hepatocytes and suppression of fibroblast activities.^{4,5}
- This substance is the main ingredient of the *Cordyceps* Capsule.

CURCUMA LONGA LINN

- Curcumin is an active ingredient extracted from Chinese herb *Curcuma longa* Linn.
- It has strong antioxidant effects. An animal study found it inhibits hepatic stellate cell proliferation without cytotoxicity, and also inhibits the formation of type I collagen, HA, and LN to different degrees.⁶

DANSHENSUAN A

- Danshensuan A is a water soluble ingredient of *Salvia miltiorrhiza* with antioxidant effects.
- Animal experiments found it suppresses the proliferation of fibroblastic cells and the synthesis of intracellular collagen.⁷
- Extract IH764-3 of *Salvia miltiorrhiza* has been shown to markedly reduce fibrosis in rat fibrotic models and reduce the content of hydroxyproline (Hyp), type I and III collagen, HA, and LN. It can also improve liver function and liver histology.⁸
- These substances are the main ingredients of the Circulation P Capsule.

DESMODII STYRACIFOLIUM HER

- This herb can facilitate bile secretion and help expel sandy gall stones.
- It can relax the sphincter of Oddi, helping to abate biliary obstruction and pain.
- It prevents the precipitation of gallstone-forming elements.

GLYCYRRHIZIN (GL)

- GL, the active ingredient in licorice root, has various pharmacological actions that can be used in treating hepatitis C.
- GL has antiviral effects. It can induce production of interferon-gamma in test animals and humans. It can prolong the survival of mice after being injected with mouse hepatitis virus (MHV). In rabbits, it can inhibit Vaccinia virus proliferation.
- GL protects liver cells from chemical injuries. It can alleviate histological changes due to carbon tetrachloride intoxication, and lower ALT. It can reduce liver cell degeneration and necrosis, and help recover glycogen and RNA. Experimental hepatitis and cirrhosis studies in rats found GL can promote regeneration of liver cells and inhibit fibrosis.⁹ It can also reduce gamma globulin and interstitial inflammation in the liver.

- It has antiallergic, antiinflammatory, and detoxifying activities that resemble those of glucocorticoid. GL also inhibits the release of histamine from mast cells.
- Although licorice root is a nontoxic herb, long-term use of GL can cause adverse reactions in about 20% of patients. Adverse reactions include edema, rise in blood pressure, low blood potassium, dizziness, muscle fatigue, and others. People with hypertension should not take GL.

LIGUSTICUM CHUANZIONG

- The active ingredient of Ligusticum chuanziong is chuanxionyzine, also known as pyrazine.
- In the rat CCl₄-induced fibrotic model, it can reduce ALT, HA, type III pre-collagen, and reduce fibrosis. It is an antioxidant and can increase superoxide dismutase activities and reduce the level of methylene dioxymphetamine.¹⁰
- It can improve microcirculation, promote regeneration and repair of the liver cells, and eliminate free radicals. Its liver-protective and antifibrosis effects are realized by its anti-oxidant mechanism.¹¹
- This substance is an ingredient of the Circulation P Capsule.

LIGUSTRUM LUCIDUM AIT

- Ligustrum is a highly purified extract of Ligustrum lucidum fructus. Its active chemical component is oleanolic acid. It can protect the liver from chemical and biological injuries.
- Ligustrum can lower ALT levels. In experimental cirrhosis studies, it has been found to inhibit degeneration and reduce liver cell death.¹² It can increase the glycogen in the liver, and accelerate the regeneration of liver cells. It can also inhibit inflammation and collagen formation.
- It can raise the white blood cell count, and is used to treat leukopenia caused by chemotherapy and radiotherapy.
- In clinical trials for hepatitis, ligustrum reduced ALT, AST, and jaundice.
- It promotes lymphoblast cell transformation and macrophage phagocytosis.
- Ligustrum can increase coronary blood flow.
- Acute and chronic toxicity tests have shown ligustrum has very low toxicity.

MARMODICA CHARNATIA (BITTER MELON)

- A 1981 clinical trial in England found that bitter melon (BM) can significantly improve glucose tolerance in type II diabetes.¹³ A water-soluble extract of BM can significantly reduce blood glucose concentrations during oral glucose tolerance tests.
- Animal studies with normal and diabetic rats and rabbits have shown BM has a hypoglycemic effect.¹⁴ Insulin-like molecules in the extract of BM have physiological effects similar to those of insulin. The extract of BM can also stimulate the pancreas to secrete insulin. Some of the ingredients of BM can also prolong the effects of insulin. Comparative studies conducted in China found that BM's blood sugar reducing effects were similar to those of tolbutamide.¹⁵
- In China and southeast Asia, BM is a commonly consumed vegetable, which indicates that it is very safe.

NOTOGINSENG

- Notoginseng's active ingredient can suppress fibrotic rat expression of TGF- β 1, type I and III collagen, and reduce fibrosis.¹⁶
- This substance is a main ingredient of the Circulation P Capsule.

PAEDERIAE CAULIS

- This herb has antirheumatic, digestant, antitussive, mucolytic, analgesic, hypotensive, and corticosteroid-like effects. It also has sedative actions and can elevate the pain threshold.
- Paederiae caulis inhibited spontaneous activity in mice experiments, and prolonged pentobarbital-induced sleep.¹⁵
- The total alkaloids of this herb inhibit the contraction of the isolated intestine, and antagonize spasm due to acetylcholine and histamine.
- Paederiae caulis has been used for many skin diseases such as eczema, neurodermatitis, and leprosy. This herb is also used to treat respiratory diseases such as bronchitis and whooping cough.
- It has a high LD50 with virtually no toxicity.

EXTRACTS OF PERSICAE SEMEN

- Studies done at Shanghai TCM University found that Persicae Semencan promote the action of collagenase to reduce type III pre-collagen synthesis and increase the degradation of collagen, and cause the hydroxyproline level to increase in the blood.
- This herbal extract has been successfully used to treat cirrhosis caused by viral hepatitis and parasitic hepatitis.¹⁷
- It is one of major ingredients of the Circulation P Capsule.

POLYGONI CUSPIDATI RHIZOMA

- The 10% decoction of Polygoni cuspidati rhizoma inhibited Asian influenza virus type A, Jingke 68-1 strain, ECHO 11, and herpes simplex viruses.¹⁸ A stronger inhibitory action was exhibited by a 2% decoction against adenovirus type III, poliomyelitis virus type II, Coxsackie virus group A and B, ECHO 11 group, encephalitis B virus, and herpes simplex I strain.
- A 20% solution showed significant inhibitory action against the hepatitis B surface antigen (HBsAg). Active principles I and II of the herb were able to decrease the HBsAg titer eight-fold.
- This herb has been used for chronic viral hepatitis, acute inflammatory diseases, neonatal jaundice, and leukopenia.

RHEI RHIZOMA (RHUBARB ROOT)

- Alcohol extracts of this herb contain aloe-emodin, rhein, and chrysophanol.
- Pharmacological studies have found it has a wide antimicrobial spectrum. It can effectively suppress Staphylococcus, anthrax bacillus, Bacillus dysenteriae, Streptococcus, and E. coli.¹⁹ It is especially effective for Staphylococcus and Streptococcus.
- This herb also has antiviral effects. The herb decoction has been shown to strongly inhibit the influenza virus.²⁰
- Clinically, rhubarb root has been used for indigestion, constipation, acute inflammatory diseases, infectious and parasitic diseases, hemorrhage, and thrombocytopenia (low platelets). Its strong purgative and laxative effects can be used to treat constipation.
- Chrysophanol has hemostatic effects (stopping bleeding), and is often used for bleeding in the gastrointestinal system.
- The LD50 of rhubarb root is 250-500mg/kg. The LD50 of chrysophanol is 10grams/kg and is very safe.
- Emodin is an active compound of Rhei Rhizoma. It antagonizes fibrosis and has been used as an effective treatment for cirrhosis and other organ fibrosis. Its antifibrosis effects are based on its actions to protect against cell damage from inflammation and reducing necrosis, and regulating the synthesis and decomposition of the ECM.²¹⁻²³

SALVIAE MILTIORRHIZIAE RADIX (SALVIA)

- Salvia improves the microcirculation in the liver. It markedly increases liver blood flow in acute and chronic carbon tetrachloride (CCl₄) toxic models.²⁴ The fibrosis preventive effects of Salvia are mainly the result of its microcirculation improving effects.
- In the CCl₄ toxic rat model, Salvia can quickly lower ALT, and reduce inflammation, necrosis, and steatosis (fatty liver degeneration). In the control group, CCl₄ caused liver collagen and globulin to increase and every rat in the control group developed cirrhosis. In the Salvia treated group, not a single rat developed cirrhosis, and the collagen and globulin did not increase.²⁵

SCHIZANDRAE FRUCTUS

- Animal studies have shown the alcohol extract of the kernel of the fruit of schizandra (AEKFS) has many pharmacological activities such as:
 - lowering ALT caused by CCl₄-induced liver damage
 - reducing fat deposits in liver cells caused by CCl₄ intake
 - reducing the histological damage of the liver cells caused by CCl₄
 - promoting glycogen and serum protein synthesis in the liver
 - promoting liver regeneration after partial removal of the liver, and
 - increasing metabolic enzymes in the liver.
- Clinical trials using tablets made from the whole AEKFS conducted in three hospitals in China found that of 107 chronic viral hepatitis cases, ALT was normalized for 73 with an associated improvement in clinical symptoms. There were no serious side effects reported.²⁶

SOPHORAE SUBPROSTRATAE RADIX

- The active ingredient of Sophorae subprostratae radix is oxymatrine. In three commonly used liver damage models, oxymatrine prevented liver cell damage. Compared with the control group, the oxymatrine treated group had much lower ALT levels, less liver cell necrosis, and less inflammation.²⁷
- Oxymatrine can increase cytochrome P-450 content and activity, and increase the amount of smooth surfaced endoplasmic reticulum of the liver cell. Thus, it can strengthen the detoxification capability of the liver.
- It also has viral suppressive, anti-inflammatory, immunoregulatory, anticancer, and leukogenic (raising the white blood cell count) effects.
- Recent studies have shown oxymatrine at a concentration of 62.5 ng/ml, suppresses fibroblastic cell activities and suppresses the expression of mRNA of type III procollagen. The potency of these effects is dose dependent. Clinical studies found that the treated group showed lower levels of ALT, collagen IV, HA, and TNF- β , and less inflammatory activities and fibrosis than that of the control group.^{28, 29}
- This substance is one of the main ingredients of Hepa F #2 and Hepa F #1a Capsules.

TAURINE

- Taurine is an active ingredient of Nature Calculus Bovis.
- In TCM, the gallstone of *Bos Taurus domestica* is used to remove heat from the heart, induce resuscitation, eliminate phlegm, relieve convulsion and remove heat and toxic substances.
- Recent studies found that taurine can suppress hyaluronic acid (HA) and the expression of mRNA of type I and III

precollagens. In rat fibrotic models, it was found that treatment with this substance was associated with reduction in collagen deposition in the liver tissue and reduced hydroxyproline (Hyp) in the liver. In rat CCl₄ fibrotic model, it reduced the content of Hyp, type I and III precollagen, HA, LN, and improved liver function and liver histology.³⁰

TETRANDRINE

- Tetrandrine is the active ingredient of *Stephania tetrandra* S. Moore.
- This substance can affect the calcium channel and calcium distribution in cells. It also exhibits antiinflammatory, antiallergic, analgesic, and antibacterial effects. It can suppress the collagen and DNA synthesis in the HSC. The suppression is dose dependent. After being treated with this substance, the serum HA, P-II-P, and the collagen deposit levels decreased significantly. At the same time, inflammation, cell necrosis, and inflammatory cell infiltration decreased. This substance has been used in treating lung fibrosis with successful clinical outcomes.^{31, 32}

Herbal Formulas

CAPILLARIS COMBINATION

- This is a very old and famous formula was originated by the Chinese medical sage Zhang Zhongjing 2,000 years ago.
- Clinical Pharmacology
 - Clears dampness-heat type jaundice that manifests as bright yellowish coloration of the eyes and skin, oliguria with dark yellow urine, yellow and greasy fur on the tongue, a smooth and rapid pulse, and other signs and symptoms.
 - The whole formula has cholegogic and choloretic (facilitating bile secretion) effects. Intraduodenal administration of the alcohol extracts of this formula in rats markedly increased the bile collected by up to 51.28%, and increased the solid composition of the bile by 85%.³³ Its choloretic effects are mainly due to increasing the secretion of the bile in the micro bile ducts.
 - It has liver protective effects and can reduce the liver damage caused by α -naphthylisothiocyanate (ANIT). While using this formula, the ALP, total bilirubin, ALT, and AST elevations caused by ANIT all improved dramatically.³⁴
 - Histological examination revealed that hypertrophy of the micro bile duct cells, necrosis of liver cells, and inflammatory cell infiltration were much milder in treated animals compared with the untreated control group. The liver glycogen and RNA content were normalized, and the ALT activity was markedly reduced.³⁵

CIRCULATION NO.1 CAPSULE

- This is a modified formula based on *Persica* and *Achyranthes* Combination and *Persica* and *Cnidium* Combination. Traditionally, these formulas were used for blood stagnancy or stasis that manifests with symptoms such as dark or purplish tongue, cold hands and feet, dark rings around the eyes, liver palm, spider moles, dry and itchy skin, rashes, lumps, and upper abdominal discomfort.
- Clinical Pharmacology
 - This formula can noticeably ameliorate the acute microcirculation disorder induced by macromolecular dextran in rats.³⁶ It dilates the microcapillaries, accelerates blood flow, and opens more micro-capillary networks. The result is to increase blood infusion to the tissues and stop the pathology caused by the microcirculation disorder. It can promote the phagocytosis by macrophages (Kupffer cells) in the liver. It can also clear the clotting factors in DIC (disseminated intravascular coagulation) and stop the progress of DIC.³⁷
 - It will not prolong the PTT or prothrombin time. It can suppress the clustering of platelets.
 - It can improve phagocytosis by macrophages. It can also regulate cellular and humoral immunity.
 - It can noticeably suppress granuloma formation (a fibrotic activity).³⁸

GINSENG AND ATRACTYLODES FORMULA

- This formula was first created by the National Medical Bureau of the Song Dynasty 1,000 years ago.
- Clinical Pharmacology
 - This formula is used for strengthening digestion and vital energy. It is helpful for treating diarrhea, poor appetite, emaciation, and white and greasy fur on the tongue.
 - This formula can improve absorption in the intestinal tract. Giving the decoction of the formula increased water and chloride absorption in the intestine of rabbits under anesthesia.³⁹ It is an antagonist to the spastic effects of acetylcholine on the intestine.

HERSOM CAPSULE

- Clinical Pharmacology
 - This formula has been studied in teaching hospitals in China. Randomized, controlled clinical trials have shown that this formula has sleep-inducing effects and improves the quality of sleep. In a study of 374 patients, improvement in sleep was found to be statistically equivalent to that of methaqualone.⁴⁰ HerbSom formula is not habit forming and has no hangover effect.
 - The pharmacological data of these herbs show that they may also have many beneficial effects on the cardiovascular and neurological systems of the body.
 - These herbs have no harmful effects on the liver.
- **CAUTION:** Keep this formula out of reach of children. This product should not be taken while driving a car or operating heavy machinery.

YUNNAN PAIYAO CAPSULE

- This is a very famous traditional herbal medicine.
- Clinical Pharmacology
 - This formula can quickly stop bleeding in rat and rabbit liver injury models, and rabbit large artery injury models.⁴¹ It has been shown to dramatically reduce clotting time in human and rabbit experiments.⁴² The hemostatic effects begin 30 minutes after administration, and peaks 2-3 hours after administration. These effects can last for more than four hours. The hemostatic effect is due to a permeability change in the cell membranes of platelets. This causes the release of clotting factors from platelets that promote clotting.
 - This formula can suppress inflammation in various animal models.⁴³ The strength of its antiinflammatory effect is similar to that of corticosteroids.
 - It also has analgesic and antineoplastic (antitumor) effects.

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