H09

Minor Bupleurum Formula Extract Granules
(Sho-saiko-to; Xiao Chai Hu Tang)

Description:
The daily dose of 7.5g (3 unit packets) contains 4.20g of Minor Bupleurum Formula extract powder:
Bupleurum Root (Chai hu) …… 7.0g
Pinellia Tuber (Ban xia) …….5.0g
Scutellaria Root (Huang qin) …….3.0g
Ginseng (Ren shen) ……3.0g
Jujube (Da zao) ……..3.0g
Licorice (Gan cao) …….2.0g
Ginger (Sheng jiang) ……..1.0g

Form	Color	Taste	Odor	Code
Granules	Light brown	Slightly sweet and little bitter afterward	Slightly specific odor	H09

Standardization Specification:
This product is standardized to contain 24.7-46.0 mg/day of Glycyrrhizin, 110.6-205.6 mg/day of Baicalin, and 6.5-19.7 mg/day of Saikosaponin.

Therapeutic Recommendation ("Sho"):
1. Nausea, loss of appetite, gastritis, weakness of GI tract, fatigue and late stage of cold.
2. For improvement of liver dysfunction due to chronic hepatitis.

Abdominal Diagnosis ("Hara"):
Medium abdominal tension with resistance and palpate pain in bilateral subcostal area.

TCM Formulation Strategy:
Chai hu, the chief herb, combined with the deputy herb *huang qin*, vent the pathogenic influence and release the half exterior aspects in the lesser yang stage. The assistant herb, *ban xia*, warms and transforms phlegm and turbidity in the middle burner, and the other assistant herb, *sheng jiang* harmonize the middle burner to stop nausea and vomiting. *Ren shen, zhi gan cao* and *da zao* support middle burner qi and thereby prevent the pathogenic influence from penetrating into the interior. *Zhi gan cao* is envoy too, and can harmonize whole drug actions. Based on the combination of these herbs, this formula can regulate lesser yang-stage disorders.

Dosage and Administration:
For adults: 7.5g/day orally divided into 3 doses before or between meals. The dosage may be adjusted based on age, body weight and symptoms.

Consumer Tablet Product: Liver Kampo™

Research Finding:
1. Prevents hepatocarcinogenesis through inhibition of 8-OHdG formation, a parameter of genetic risk for hepatocarcinogenesis (Hepatology. 35(5):1125-33, 2002 May).
2. Protects against hepatic fibrosis and carcinoma. Anti-carcinogenic properties: 1). Inhibits chemical hepatocarcinogenesis in animals. 2). Acts as a biological response modifier and suppresses the proliferation of hepatoma cells by inducing apoptosis and arresting the cell cycle. 3). Functions as a potent anti-fibrosuppressant via the inhibition of oxidative stress in hepatocytes and hepatic stellate cells. (Gastroenterol Hepatol 2000 Mar;15 Suppl:D84-90).
3. Induces liver regeneration by increasing the production of HGF and suppressing the production of TGF-beta in the liver and spleen of partial hepatectomized rats. (J Pharm Pharmacol 2000 Jan;52(1):111-8).
4. Functions as a potent antifibrosuppressant by inhibition of lipid peroxidation in hepatocytes and stellate cells in vivo. (Hepatology. 29(1):149-60, 1999 Jan).
5. Inhibits growth and metastasis of malignant melanoma primarily developed in ret-transgenic mice. (J Invest Dermatol 1998 Oct;111(4):640-4; J Invest Dermatol 2000 Mar;114(3):599-601). Possible mechanisms: upregulating Fas-mediated apoptosis and arresting cell cycle through downregulation of cyclin-dependent kinases (Int J Oncol 1998 Jun;12(6):1321-6).
6. Improves interleukin-12 production in patients

with HCV-positive liver cirrhosis (Dev Immunol 1999;7(1):17-22).

7. The effects of baicalein, a major flavonoid in Sho-saiko-to, on proliferation and protein synthesis were evaluated in cultured rat hepatic stellate cells. The results demonstrate the strong antiproliferative effect of baicalein in hepatic stellate cells, showing the possibility of baicalein as an antifibrogenetic drug for hepatic fibrosis. (European Journal of Pharmacology. 378(1):129-35, 1999 Jul 28)

8. Sho-saiko-to improves subjective symptoms, and a recently developed vaccine therapy reduces the viral replication in some chronic hepatitis B virus (HBV)-carriers. The study presented here considers the impact of a combination of vaccine therapy and TJ-9 and the mechanism underlying the therapeutic effect of TJ-9. RESULTS: Twelve months after starting the therapy, 9% (1 of 11), 61% (11 of 18), and 100% (10 of 10) of HBV-transgenic mice (HBV-Tg) receiving only the TJ-9-treatment, only the monthly vaccine, and both the TJ-9 and vaccine, respectively, responded to therapy and became completely negative for HBsAg. CONCLUSION: These data confirm the therapeutic role of TJ-9 during HBV infection and inspire optimism of a widespread use of TJ-9 during immune therapies. (European Journal of Clinical Investigation. 29(9):786-92, 1999 Sep.).

9. Sho-saiko-to (SST), has been examined for its inhibitory effect on human immunodeficiency virus type 1 (HIV-1) replication in peripheral blood mononuclear cells (PBMCs). SST alone moderately inhibited HIV-1 replication at a concentration of 25 microg/ml. When SST was combined with zidovudine (AZT), lamivudine (3TC) or AZT plus 3TC, SST enhanced the anti-HIV-1 activity of 3TC. In contrast, SST slightly enhanced the anti-HIV-1 activity of AZT plus 3TC but did not enhance the activity of AZT alone. These results suggest that the combination of SST and 3TC has potential as a chemotherapeutic modality of HIV-1 infection. (Microbiology & Immunology. 41(10):835-9, 1997).

10. Sho-saiko-to could adjust the decreased IL-10 production and the increased IL-4 and IL-5 production of mononuclear cells from patients with hepatitis C. Moderate regulation of the cytokine production system in patients with hepatitis C by using Sho-saiko-to may be useful in the prevention of disease progression. Hepatology. 25(6):1390-7, 1997 Jun

11. Helps to prevent the development of hepatocellular carcinoma in patients with cirrhosis, particularly in patients without HBs antigen.(Cancer 1995 Sep 1;76(5):743-9).

12. The antimutagenic effects of nine active compounds in the Chinese herbal medicine "sho-saiko-to" on mutagenesis induced by a direct-acting mutagen, 2-(2-furyl)-3-(5-nitro-2-furyl)acrylamide (AF-2) were investigated in Salmonella typhimurium, strain TA100. The active compounds examined were classified into two major groups, saponins and flavonoids, the former comprising glycyrrhizin, saikosaponins a, c, and d, and ginsenosides Rb1 and Rg1, and the latter, baicalin, baicalein and wogonin. Saikosaponin a and ginsenoside Rb1 were found to reduce the mutagenicity of AF-2 significantly when applied post-AF-2-treatment in the Salmonella mutagenicity assay. Ginsenoside Rb1 also decreased the mutagenic activity of AF-2 in a simultaneous treatment protocol. The results indicate that saikosaponin a and ginsenoside Rb1 may enhance DNA repair, and ginsenoside Rb1 may also have the ability to inactivate the mutagenic activity of AF-2 directly. On the other hand, saikosaponin d and baicalin showed a slight enhancing effect. None of the compounds, except baicalein, showed any toxic effect on the test strain. These findings may be useful for the development of chemopreventive agents. (Japanese Journal of Cancer Research. 86(12):1131-5, 1995 Dec.).

13. We studied the effect of Sho-saiko-to (Xiao-Chai-Hu-Tang) on HBeAg clearance rate (SN rate) in fourteen children with chronic hepatitis B virus (HBV) infection and with sustained liver disease. Seven of fourteen patients (50.0%) became HBeAg negative in the average observation period of 0.47 years (0.2-0.9 years). Four of those seven patients developed anti-HBe. The annual SN rate in the She-saiko-to treated group was apparently higher than the natural annual SN rate (22.7%) of 22 untreated patients retrospectively reviewed from the onset of hepatitis. Sho-saiko-to seemed to promote clearance of HBeAg in children with chronic HBV infection and with sustained liver disease. Sho-saiko-to may be a useful drug for such patients. (American Journal of Chinese Medicine. 19(2):121-9, 1991).