

ACVBM Veterinary Botanical Medicine Herb Index

Journals publishing peer-reviewed articles on [Xiao Chai Hu Tang](#)

Antineoplastic action

[Understanding the polypharmacological anticancer effects of Xiao Chai Hu Tang via a computational pharmacological model.](#)

Zheng CS, Wu YS, Bao HJ, Xu XJ, Chen XQ, Ye HZ, Wu GW, Xu HF, Li XH, Chen JS, Liu XX.
Exp Ther Med. 2014 Jun;7(6):1777-1783.

[\[Studies on the antitumor activity of traditional Chinese medicines. \(1\)\].](#)

Ito H, Shimura K.

Gan To Kagaku Ryoho. 1985 Nov;12(11):2145-8. Japanese.

[Antitumor activities and tumor necrosis factor producibility of traditional Chinese medicines and crude drugs.](#)

Haranaka K, Satomi N, Sakurai A, Haranaka R, Okada N, Kobayashi M.

Cancer Immunol Immunother. 1985;20(1):1-5.

[\[An approach to prolongation of survival rate in tumor bearing mice using 5-fluorouracil in combination with various kinds of herb medicine\].](#)

Ohta T, Tawara M, Tatsuka M, Abe H, Odashima S.

Gan To Kagaku Ryoho. 1983 Aug;10(8):1858-65. Japanese.

Renal Carcinoma

[Antitumor effects and pharmacological interaction of xiao-chai-hu-tang \(sho-saiko-to\) and interleukin 2 in murine renal cell carcinoma.](#)

Huang Y, Marumo K, Murai M.

Keio J Med. 1997 Sep;46(3):132-7.

[\[Studies on the antitumor activity of traditional Chinese medicines. \(II\). The antitumor mechanism of traditional Chinese medicines\].](#)

Ito H, Shimura K.

Gan To Kagaku Ryoho. 1985 Nov;12(11):2149-54. Japanese.

Hepatocellular Carcinoma

[THE HERBAL MIXTURE XIAO-CHAI-HU TANG \(XCHT\) INDUCES APOPTOSIS OF HUMAN HEPATOCELLULAR CARCINOMA HUH7 CELLS IN VITRO AND IN VIVO.](#)

Zhao J, Liu L, Zhang Y, Wan Y, Hong Z.

Afr J Tradit Complement Altern Med. 2017 Mar 1;14(3):231-241.

[Prescription frequency and patterns of Chinese herbal medicine for liver cancer patients in Taiwan: a cross-sectional analysis of the National Health Insurance Research Database.](#)

Ting CT, Kuo CJ, Hu HY, Lee YL, Tsai TH.

BMC Complement Altern Med. 2017 Feb 20;17(1):118.

[Addition and Subtraction Theory of TCM Using Xiao-Chaihu-Decoction and Naturopathy in Predicting Survival Outcomes of Primary Liver Cancer Patients: A Prospective Cohort Study.](#)

Dai M, Yang YW, Guo WH, Wang FL, Xiao GM, Li YM, Yang HZ.

Evid Based Complement Alternat Med. 2016;2016:4723530.

[Sho-saiko-to, a traditional herbal medicine, regulates gene expression and biological function by way of microRNAs in primary mouse hepatocytes.](#)

Song KH, Kim YH, Kim BY.

BMC Complement Altern Med. 2014 Jan 11;14:14.

[Current understanding on antihepatocarcinoma effects of xiao chai hu tang and its constituents.](#)

Zheng N, Dai J, Cao H, Sun S, Fang J, Li Q, Su S, Zhang Y, Qiu M, Huang S.

Evid Based Complement Alternat Med. 2013;2013:529458.

[Xiaochaihu Decoction attenuates the vicious circle between the oxidative stress and the ALP inactivation through LPS-catecholamines interactions in gut, liver and brain during CCl4+ethanol-induced mouse HCC.](#)

Liu XQ, Hu XJ, Xu HX, Zeng XY.

BMC Complement Altern Med. 2013 Dec 28;13:375.

[\[Regularity analysis on clinical treatment in primary liver cancer by traditional Chinese medicine\].](#)

Liu X, Li N.

Zhongguo Zhong Yao Za Zhi. 2012 May;37(9):1327-31. Chinese.

[Sho-saiko-to: Japanese herbal medicine for protection against hepatic fibrosis and carcinoma.](#)

Shimizu I.

J Gastroenterol Hepatol. 2000 Mar;15 Suppl:D84-90. Review.

[\[Controlled prospective trial to evaluate Syosakiko-to in preventing hepatocellular carcinoma in patients with cirrhosis of the liver\].](#)

Yamamoto S, Oka H, Kanno T, Mizoguchi Y, Kobayashi K.

Gan To Kagaku Ryoho. 1989 Apr;16(4 Pt 2-2):1519-24. Japanese.

Pulmonary Carcinoma

[20\(S\)-protopanaxadiol triggers mitochondrial-mediated apoptosis in human lung adenocarcinoma A549 cells via inhibiting the PI3K/Akt signaling pathway.](#)

Zhang YL, Zhang R, Xu HL, Yu XF, Qu SC, Sui DY.

Am J Chin Med. 2013;41(5):1137-52.

[Acetone extract of Bupleurum scorzonerifolium inhibits proliferation of A549 human lung cancer cells via inducing apoptosis and suppressing telomerase activity.](#)

Cheng YL, Chang WL, Lee SC, Liu YG, Lin HC, Chen CJ, Yen CY, Yu DS, Lin SZ, Harn HJ.

Life Sci. 2003 Sep 19;73(18):2383-94.

[Cytotoxic effect of herbal medicine sho-saiko-to on human lung-cancer cell-lines in-vitro.](#)

Mizushima Y, Kashii T, Tokimitsu Y, Kobayashi M.

Oncol Rep. 1995 Jan;2(1):91-4.

[Effects of a blended Chinese medicine, xiao-chai-hu-tang, on Lewis lung carcinoma growth and inhibition of lung metastasis, with special reference to macrophage activation.](#)

Ito H, Shimura K.

Jpn J Pharmacol. 1986 Jul;41(3):307-14.

Thyroid Carcinoma

[Saikosaponin-d inhibits proliferation of human undifferentiated thyroid carcinoma cells through induction of apoptosis and cell cycle arrest.](#)

Liu RY, Li JP.

Eur Rev Med Pharmacol Sci. 2014;18(17):2435-43.

Mast Cell tumors

[The ex vivo effect of the herbal medicine sho-saiko-to on histamine release from rat mast cells.](#)

Matsumoto T, Shibata T.

Eur Arch Otorhinolaryngol. 1998;255(7):359-64.

Acute Myeloid Leukemia

[Generation of reactive oxygen species and induction of apoptosis of HL60 cells by ingredients of traditional herbal medicine, Sho-saiko-to.](#)

Makino T, Tsubouchi R, Murakami K, Haneda M, Yoshino M.
Basic Clin Pharmacol Toxicol. 2006 Apr;98(4):401-5.

Ovarian Cancer

[Inhibitory effects of herbal drugs on the growth of human ovarian cancer cell lines through the induction of apoptosis.](#)

Zhu K, Fukasawa I, Furuno M, Inaba F, Yamazaki T, Kamemori T, Kousaka N, Ota Y, Hayashi M, Maehama T, Inaba N.
Gynecol Oncol. 2005 May;97(2):405-9.

Esophageal cancer:

[Research on effect of minor bupleurum decoction of proliferation and apoptosis of esophageal cancer cell strain eca-109 cell.](#)

Li X, Sun M, Zhao Z, Yang J, Chen K.
Pak J Pharm Sci. 2014 Sep;27(5 Suppl):1675-9.

Chemoprevention

[Gadoxetic Acid-Enhanced MRI and Sonoelastography: Non-Invasive Assessments of Chemoprevention of Liver Fibrosis in Thioacetamide-Induced Rats with Sho-Saiko-To.](#)

Chen YW, Tsai MY, Pan HB, Tseng HH, Hung YT, Chou CP.
PLoS ONE. 2014 Dec 9; 9(12)

[\[Effect of Xiaochaihu decoction and different herbal formulation of component on inhibiting H22 liver cancer in mice and enhancing immune function\].](#)

Li J, Xie M, Gan Y.
Zhongguo Zhong Yao Za Zhi. 2008 May;33(9):1039-44. Chinese.

[Extracellular matrix remodeling may predominate over hepatocyte injury in hepatocellular carcinoma development.](#)

Yoshiji H, Kuriyama S, Yoshii J, Ikenaka Y, Noguchi R, Yanase K, Namisaki T, Yamazaki M, Tsujinoue H, Imazu H, Fukui H.

Oncol Rep. 2003 Jul-Aug;10(4):957-62.

[Effects of lycopene and Sho-saiko-to on hepatocarcinogenesis in a rat model of spontaneous liver cancer.](#)

Watanabe S, Kitade Y, Masaki T, Nishioka M, Satoh K, Nishino H.
Nutr Cancer. 2001;39(1):96-101.

[\[Effect of sho-saiko-to \(xiao-chai-hu-tang\) on hepatic injury induced by halothane in rats\].](#)

Mitsukawa H, Ikeda K.

Masui. 1991 May;40(5):794-800. Japanese.

XCHT and Chemotherapy

[Reactive oxygen species-mediated apoptosis contributes to chemosensitization effect of saikosaponins on cisplatin-induced cytotoxicity in cancer cells.](#)

Wang Q, Zheng XL, Yang L, Shi F, Gao LB, Zhong YJ, Sun H, He F, Lin Y, Wang X.
J Exp Clin Cancer Res. 2010 Dec 9;29:159.

For Chemo Side effects

[Sosiho-tang ameliorates cachexia-related symptoms in mice bearing colon 26 adenocarcinoma by reducing systemic inflammation and muscle loss.](#)

Kim A, Im M, Ma JY.

Oncol Rep. 2016 Mar;35(3):1841-50.

[\[Clinical availability of the herbal medicine, SYOUSAIKOTOU, as a gargling agent for prevention and treatment of chemotherapy-induced stomatitis\].](#)

Matsuoka H, Mizushima Y, Kawano M, Tachibana N, Sawada Y, Kato S, Nagakura H, Tanaka M, Suzuki K, Tadanobu K.

Gan To Kagaku Ryoho. 2004 Nov;31(12):2017-20. Japanese.

[Japanese modified traditional Chinese medicines as preventive drugs of the side effects induced by tumor necrosis factor and lipopolysaccharide.](#)

Satomi N, Sakurai A, Iimura F, Haranaka R, Haranaka K.

Mol Biother. 1989;1(3):155-62.

Immune Modulation/Augmentation

[Shosaikoto increases calprotectin expression in human oral epithelial cells.](#)

Hiroshima Y, Bando M, Kataoka M, Shinohara Y, Herzberg MC, Ross KF, Inagaki Y, Nagata T, Kido J.

J Periodontol Res. 2010 Feb;45(1):79-86.

[Upregulation of interferon-gamma and interleukin-4, Th cell-derived cytokines by So-Shi-Ho-Tang \(Sho-Saiko-To\) occurs at the level of antigen presenting cells, but not CD4 T cells.](#)

Kang H, Choi TW, Ahn KS, Lee JY, Ham IH, Choi HY, Shim ES, Sohn NW.

J Ethnopharmacol. 2009 May 4;123(1):6-14.

[The herbal medicine Sho-saiko-to selectively inhibits CD8+ T-cell proliferation.](#)

Ohtake N, Yamamoto M, Takeda S, Aburada M, Ishige A, Watanabe K, Inoue M.

Eur J Pharmacol. 2005 Jan 10;507(1-3):301-10.

[Effect of two different groups of Chinese medicines on nitric oxide production by mouse macrophage-like cells.](#)

Kaneko T, Chiba H, Horie N, Hashimoto K, Satoh K, Kusama K, Sakagami H.

In Vivo. 2004 Nov-Dec;18(6):771-8.

[Shosaiko-to and other Kampo \(Japanese herbal\) medicines: a review of their immunomodulatory activities.](#)

Borchers AT, Sakai S, Henderson GL, Harkey MR, Keen CL, Stern JS, Terasawa K, Gershwin ME.

J Ethnopharmacol. 2000 Nov;73(1-2):1-13. Review.

[The effects of crude polysaccharide fractions of 4 kinds of kampo-hozai administered orally on nitric oxide production by murine peritoneal macrophages.](#)

Terawaki K, Nose M, Ogihara Y.

Biol Pharm Bull. 1997 Jul;20(7):809-11.

[A polysaccharide fraction of Zizyphi fructus in augmenting natural killer activity by oral administration.](#)

Yamaoka Y, Kawakita T, Kaneko M, Nomoto K.

Biol Pharm Bull. 1996 Jul;19(7):936-9.

[A polysaccharide fraction of shosaiko-to active in augmentation of natural killer activity by oral administration.](#)

Yamaoka Y, Kawakita T, Kaneko M, Nomoto K.

Biol Pharm Bull. 1995 Jun;18(6):846-9.

[Augmentation of NK activity after oral administration of a traditional Chinese medicine, xiao-chai-hu-tang \(shosaiko-to\).](#)

Kaneko M, Kawakita T, Tauchi Y, Saito Y, Suzuki A, Nomoto K.

Immunopharmacol Immunotoxicol. 1994 Feb;16(1):41-53.

[Role of B-lymphocytes in the immunopharmacological effects of a traditional Chinese medicine, xiao-chai-hu-tang \(shosaiko-to\).](#)

Matsuura K, Kawakita T, Nakai S, Saito Y, Suzuki A, Nomoto K.

Int J Immunopharmacol. 1993 Feb;15(2):237-43.

[Enhancement of immunoglobulin A production in Peyer's patches by oral administration of a traditional Chinese medicine, xiao-chai-hu-tang \(Shosaiko-to\).](#)

Tauchi Y, Yamada A, Kawakita T, Saito Y, Suzuki A, Yoshikai Y, Nomoto K.

Immunopharmacol Immunotoxicol. 1993 Mar-Jun;15(2-3):251-72.

[Herbal medicine "sho-saiko-to" induces in vitro granulocyte colony-stimulating factor production on peripheral blood mononuclear cells.](#)

Yamashiki M, Asakawa M, Kayaba Y, Kosaka Y, Nishimura A.
J Clin Lab Immunol. 1992;37(2):83-90.

[Induction of interferon after administration of a traditional Chinese medicine, xiao-chai-hu-tang \(shosaiko-to\).](#)

Kawakita T, Nakai S, Kumazawa Y, Miura O, Yumioka E, Nomoto K.
Int J Immunopharmacol. 1990;12(5):515-21.

[Preventive effect of several drugs against Pseudomonas aeruginosa infection and the toxicity of combined tumor necrosis factor with lipopolysaccharide: relationship between lethality and the arachidonic cascade.](#)

Satomi N, Sakurai A, Imura F, Haranaka R, Haranaka K.
Biotherapy. 1990;2(3):227-34.

[Induction of colony-stimulating factor\(s\) after administration of a traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\).](#)

Yonekura K, Kawakita T, Mitsuyama M, Miura O, Yumioka E, Suzuki A, Nomoto K.
Immunopharmacol Immunotoxicol. 1990;12(4):647-67.

[Contribution of cytokines to time-dependent augmentation of resistance against Listeria monocytogenes after administration of a traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\).](#)

Kawakita T, Mitsuyama M, Kumazawa Y, Miura O, Yumioka E, Nomoto K.
Immunopharmacol Immunotoxicol. 1989;11(2-3):233-55.

[Activation of murine peritoneal macrophages by intraperitoneal administration of a traditional Chinese herbal medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\).](#)

Kumazawa Y, Takimoto H, Miura S, Nishimura C, Yamada A, Kawakita T, Nomoto K.
Int J Immunopharmacol. 1988;10(4):395-403.

[Protective effect of a traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\), on Listeria monocytogenes infection in mice.](#)

Kawakita T, Yamada A, Mitsuyama M, Kumazawa Y, Nomoto K.
Immunopharmacol Immunotoxicol. 1988;10(3):345-64.

[Functional maturation of immature B cells accumulated in the periphery by an intraperitoneal administration of a traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\).](#)

Kawakita T, Yamada A, Kumazawa Y, Nomoto K.
Immunopharmacol Immunotoxicol. 1987;9(2-3):299-317.

[Protective effect of a traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\), on Pseudomonas aeruginosa infection in mice.](#)

Kawakita T, Yamada A, Mitsuyama M, Kumazawa Y, Nomoto K.
Immunopharmacol Immunotoxicol. 1987;9(4):523-40.

[Accumulation of immature B and null lymphocytes in the periphery after intraperitoneal administration of traditional Chinese medicine, xiao-chai-hu-tang \(Japanese name: shosaiko-to\).](#)

Kawakita T, Yamada A, Kumazawa Y, Nomoto K.
J Immunopharmacol. 1986;8(4):561-88.

Anti-inflammatory

[Soshiho-tang water extract inhibits ovalbumin-induced airway inflammation via the regulation of heme oxygenase-1.](#)

Jeon WY, Shin HK, Shin IS, Kim SK, Lee MY.
BMC Complement Altern Med. 2015 Sep 18;15:329.

[Phenylpropanoid NF-kappaB inhibitors from Bupleurum fruticosum.](#)

Bremner P, Tang S, Birkmayer H, Fiebich BL, Muñoz E, Marquez N, Rivera D, Heinrich M.
Planta Med. 2004 Oct;70(10):914-8.

[\[Pharmacological studies on saiko-prescriptions. V. Mechanisms of actions of shosaiko-to on swelling of rat hind paws induced by carrageenin\].](#)

Kato M, Marumoto M, Hayashi M, Maeda T, Hayashi E.

Yakugaku Zasshi. 1984 May;104(5):516-23. Japanese. No abstract available.

XCHT: MMPs

[Effect of traditional Chinese medicine \(Xiaochaihu Tang\) on the expression of MMP-2 and MMP-9 in rats with endometriosis.](#)

Jiao L, Qi X, Lu G, Zhang Q, Zhang C, Gao J.
Exp Ther Med. 2013 Dec;6(6):1385-1389.

XCHT: Safety – in vivo

[Evaluation of oral subchronic toxicity of soshiho-tang water extract: the traditional herbal formula in rats.](#)

Lee MY, Seo CS, Shin IS, Kim YB, Kim JH, Shin HK.
Evid Based Complement Alternat Med. 2013;2013:590181

[Subacute toxicity and stability of Soshiho-tang, a traditional herbal formula, in Sprague-Dawley rats.](#)

Shin IS, Lee MY, Kim Y, Seo CS, Kim JH, Shin HK.
BMC Complement Altern Med. 2012 Dec 27;12:266.

XCHT: potential toxicities/monitoring considerations: liver, lung

[A Network-Based Pharmacology Study of the Herb-Induced Liver Injury Potential of Traditional Hepatoprotective Chinese Herbal Medicines.](#)

Hong M, Li S, Tan HY, Cheung F, Wang N, Huang J, Feng Y.
Molecules. 2017 Apr 14;22(4). pii: E632.

[Japanese herbal medicine-induced pneumonitis: A review of 73 patients.](#)

Enomoto Y Md, Nakamura Y Md PhD, Enomoto N Md PhD, Fujisawa T Md PhD, Inui N Md PhD, Suda T.
Respir Investig. 2017 Mar;55(2):138-144.

[Traditional Chinese Medicine and herbal hepatotoxicity: a tabular compilation of reported cases.](#)

Teschke R, Zhang L, Long H, Schwarzenboeck A, Schmidt-Taenzer W, Genthner A, Wolff A, Frenzel C, Schulze J, Eickhoff A.

Ann Hepatol. 2015 Jan-Feb;14(1):7-19. Review.

[Risk of liver injury associated with Chinese herbal products containing radix bupleuri in 639,779 patients with hepatitis B virus infection.](#)

Lee CH, Wang JD, Chen PC.
PLoS One. 2011 Jan 12;6(1):e16064.

[\[Effects of long term administration of Shakuyaku-kanzo-To and Shosaiko-To on serum potassium levels\].](#)

Homma M, Ishihara M, Qian W, Kohda Y.
Yakugaku Zasshi. 2006 Oct;126(10):973-8. Japanese.

(Note: Xiao Chai Hu Tang is Shosaiko-To)

[Acute hepatitis induced by Chinese hepatoprotective herb, xiao-chai-hu-tang.](#)

Hsu LM, Huang YS, Tsay SH, Chang FY, Lee SD.
J Chin Med Assoc. 2006 Feb;69(2):86-8.

[Induction of apoptosis in human lung fibroblasts and peripheral lymphocytes in vitro by Shosaiko-to-derived phenolic metabolites.](#)

Liu ZL, Tanaka S, Horigome H, Hirano T, Oka K.
Biol Pharm Bull. 2002 Jan;25(1):37-41.

[The herbal medicine Shosaiko-to exerts different modulating effects on lung local immune responses among mouse strains.](#)

Ohtake N, Nakai Y, Yamamoto M, Ishige A, Sasaki H, Fukuda K, Hayashi S, Hayakawa S.
Int Immunopharmacol. 2002 Feb;2(2-3):357-66.

[\[A possible mechanism of interstitial pneumonia during interferon therapy with sho-saiko-to\].](#)

Murakami K, Okajima K, Sakata K, Takatsuki K.

Nihon Kyobu Shikkan Gakkai Zasshi. 1995 Apr;33(4):389-94. Japanese.
[Liver injuries induced by herbal medicine, syo-saiko-to \(xiao-chai-hu-tang\).](#)
Itoh S, Marutani K, Nishijima T, Matsuo S, Itabashi M.
Dig Dis Sci. 1995 Aug;40(8):1845-8.

XCHT: gastric ulcers, consider as treatment for

[\[Pharmacokinetics of eight constituents in rat plasma after oral administration of Modified Xiaochaihu Granules for gastric ulcer based on UPLC-MS/MS\].](#)

Yang ML, You PT, He LS, Chen SH, Zhou AJ, Liu YW, Chen X.
Zhongguo Zhong Yao Za Zhi. 2018 Sep;43(18):3748-3755.

[\[Studies on serum pharmacochimistry of effective parts of modified Xiaochaihu Tang for treatment of gastric ulcer\].](#)

Chen XJ, Yang ML, Liu W, You PT, Zhou AJ, Liu YW, Chen X.
Zhongguo Zhong Yao Za Zhi. 2018 Apr;43(8):1692-1700.

[Anti-Helicobacter pylori and Anti-Inflammatory Effects and Constituent Analysis of Modified Xiaochaihutang for the Treatment of Chronic Gastritis and Gastric Ulcer.](#)

Chen X, Hu L, Wu H, Liu W, Chen S, Zhou A, Liu Y.

Evidence-based Complementary and Alternative Medicine : eCAM. 2018 Feb 26; 2018: 6810369

[Mechanisms of Antiulcer Effect of an Active Ingredient Group of Modified Xiao Chaihu Decoction.](#)

Liu W, Yang M, Chen X, Li L, Zhou A, Chen S, You P, Liu Y.

Evidence-based Complementary and Alternative Medicine : eCAM. 2018 Apr 17; 2018: 5498698

[\[Antiulcer properties of shosaiko-to\].](#)

Matsuta M, Kanita R, Tsutsui F, Yamashita A.

Nihon Yakurigaku Zasshi. 1996 Oct;108(4):217-25. Japanese.

XCHT: pancreatitis, consider as treatment for

[Modified Xiaochaihu decoction \(\) promotes collagen degradation and inhibits pancreatic fibrosis in chronic pancreatitis rats.](#)

Zhang SK, Cui NQ, Zhuo YZ, Hu JG, Liu JH, Li DH, Cui LH.
Chin J Integr Med. 2017 Nov 28.

[Modified Xiaochaihu Decoction \(\) prevents the progression of chronic pancreatitis in rats possibly by inhibiting transforming growth factor- \$\beta\$ 1/Sma- and mad-related proteins signaling pathway.](#)

Zhang SK, Cui NQ, Zhuo YZ, Li DH, Liu JH.

Chin J Integr Med. 2013 Dec;19(12):935-9.

XCHT: Thrombosis, consider as treatment for or prevention of

[Antithrombotic and antiplatelet activities of Soshiho-tang extract.](#)

Lee JJ, Kim T, Cho WK, Ma JY.

BMC Complement Altern Med. 2013 Jun 18;13:137.

XCHT: Fatty Liver, consider as treatment for

[Inhibitory effects of Japanese herbal medicines sho-saiko-to and juzen-taiho-to on nonalcoholic steatohepatitis in mice.](#)

Takahashi Y, Soejima Y, Kumagai A, Watanabe M, Uozaki H, Fukusato T.

PLoS One. 2014 Jan 22;9(1):e87279.

[Japanese herbal medicines shosaikoto, inchinkoto, and juzentaihoto inhibit high-fat diet-induced nonalcoholic steatohepatitis in db/db mice.](#)

Takahashi Y, Soejima Y, Kumagai A, Watanabe M, Uozaki H, Fukusato T.
Pathol Int. 2014 Oct;64(10):490-8.

XCHT: Hepatopathy/hepatitis, consider as treatment for

[Xiaochaihutang Inhibits the Activation of Hepatic Stellate Cell Line T6 Through the Nrf2 Pathway.](#)

Hu R, Jia WY, Xu SF, Zhu ZW, Xiao Z, Yu SY, Li J.

Front Pharmacol. 2019 Jan 7;9:1516.

[Xiaochaihutang attenuates liver fibrosis by activation of Nrf2 pathway in rats.](#)

Li J, Hu R, Xu S, Li Y, Qin Y, Wu Q, Xiao Z.

Biomed Pharmacother. 2017 Dec;96:847-853.

[Sho-saiko-to, a traditional herbal medicine, regulates gene expression and biological function by way of microRNAs in primary mouse hepatocytes.](#)

Song KH, Kim YH, Kim BY.

BMC Complementary and Alternative Medicine. 2014 Jan 11; 14: 14

[Gadoxetic acid-enhanced MRI and sonoelastography: non-invasive assessments of chemoprevention of liver fibrosis in thioacetamide-induced rats with Sho-Saiko-To.](#)

Chen YW, Tsai MY, Pan HB, Tseng HH, Hung YT, Chou CP.

PLoS One. 2014 Dec 9;9(12):e114756.

[Traditional Chinese medicine and related active compounds: a review of their role on hepatitis B virus infection.](#)

Qi FH, Wang ZX, Cai PP, Zhao L, Gao JJ, Kokudo N, Li AY, Han JQ, Tang W.

Drug Discov Ther. 2013 Dec;7(6):212-24. Review.

[Xiao-Chai-Hu Tang in treating model mice with D-galactosamine-induced liver injury.](#)

Zhou YX, Qiu YQ, Xu LQ, Guo J, Li LJ.

Afr J Tradit Complement Altern Med. 2012 Apr 2;9(3):405-11.

[A single arm phase II study of a Far-Eastern traditional herbal formulation \(sho-sai-ko-to or xiao-chai-hu-tang\) in chronic hepatitis C patients.](#)

Deng G, Kurtz RC, Vickers A, Lau N, Yeung KS, Shia J, Cassileth B.

J Ethnopharmacol. 2011 Jun 14;136(1):83-7.

[\[Xiaochaihu Tang for treatment of chronic hepatitis B: a systematic review of randomized trials\].](#)

Qin XK, Li P, Han M, Liu JP.

Zhong Xi Yi Jie He Xue Bao. 2010 Apr;8(4):312-20.

[Sho-saiko-to \(Xiao-Chai-Hu-Tang\) and crude saikosaponins inhibit hepatitis B virus in a stable HBV-producing cell line.](#)

Chang JS, Wang KC, Liu HW, Chen MC, Chiang LC, Lin CC.

Am J Chin Med. 2007;35(2):341-51.

[The role of TGF-beta 1 and cytokines in the modulation of liver fibrosis by Sho-saiko-to in rat's bile duct ligated model.](#)

Chen MH, Chen JC, Tsai CC, Wang WC, Chang DC, Tu DG, Hsieh HY.

J Ethnopharmacol. 2005 Feb 10;97(1):7-13. Epub 2004 Dec 10.

[Effects of Sho-saiko-to extract and its components, Baicalin, baicalein, glycyrrhizin and glycyrrhetic acid, on pharmacokinetic behavior of salicylamide in carbon tetrachloride intoxicated rats.](#)

Taira Z, Yabe K, Hamaguchi Y, Hirayama K, Kishimoto M, Ishida S, Ueda Y.

Food Chem Toxicol. 2004 May;42(5):803-7.

[Herbal medicine Sho-saiko-to \(TJ-9\) increases expression matrix metalloproteinases \(MMPs\) with reduced expression of tissue inhibitor of metalloproteinases \(TIMPs\) in rat stellate cell.](#)

Sakaida I, Hironaka K, Kimura T, Terai S, Yamasaki T, Okita K.

Life Sci. 2004 Mar 19;74(18):2251-63.

[Effect of Sho-saiko-to extract on hepatic inflammation and fibrosis in dimethylnitrosamine induced liver injury rats.](#)

Kusunose M, Qiu B, Cui T, Hamada A, Yoshioka S, Ono M, Miyamura M, Kyotani S, Nishioka Y.

Biol Pharm Bull. 2002 Nov;25(11):1417-21.

[Comparative study of oral and parenteral administration of sho-saiko-to \(xiao-chaihu-tang\) extract on D-galactosamine-induced liver injury in rats.](#)

Ohta Y, Nishida K, Sasaki E, Kongo M, Hayashi T, Nagata M, Ishiguro I.
Am J Chin Med. 1997;25(3-4):333-42.

[Regulation of hepatic macrophage function by oral administration of xiao-chai-hu-tang \(sho-saiko-to, TJ-9\) in rats.](#)

Fujiwara K, Mochida S, Nagoshi S, Iijima O, Matsuzaki Y, Takeda S, Aburada M.
J Ethnopharmacol. 1995 May;46(2):107-14.

[Inhibition by xiao-chai-hu-tang \(TJ-9\) of development of hepatic foci induced by N-nitrosomorpholine in Sprague-Dawley rats.](#)

Tatsuta M, Iishi H, Baba M, Nakaizumi A, Uehara H.
Jpn J Cancer Res. 1991 Sep;82(9):987-92.

[Evaluation of root quality of Bupleurum species by TLC scanner and the liver protective effects of "xiao-chai-hu-tang" prepared using three different Bupleurum species.](#)

Yen MH, Lin CC, Chuang CH, Liu SY.
J Ethnopharmacol. 1991 Sep;34(2-3):155-65.

[Effect of sho-saiko-to\(xiao-chai-hu-tang\) on HBeAg clearance in children with chronic hepatitis B virus infection and with sustained liver disease.](#)

Tajiri H, Kozaiwa K, Ozaki Y, Miki K, Shimuzu K, Okada S.
Am J Chin Med. 1991;19(2):121-9.

[Treatment of chronic liver injury in mice by oral administration of xiao-chai-hu-tang.](#)

Amagaya S, Hayakawa M, Ogihara Y, Ohta Y, Fujiwara K, Oka H, Oshio H, Kishi T.
J Ethnopharmacol. 1989 Apr;25(2):181-7.

[A multicenter randomized controlled clinical trial of Shosaiko-to in chronic active hepatitis.](#)

Hirayama C, Okumura M, Tanikawa K, Yano M, Mizuta M, Ogawa N.
Gastroenterol Jpn. 1989 Dec;24(6):715-9.

XCHT: Nephropathy, consider as treatment for

[Renal protective effect of xiao-chai-hu-tang on diabetic nephropathy of type 1-diabetic mice.](#)

Lin CC, Lin LT, Yen MH, Cheng JT, Hsing CH, Yeh CH.
Evid Based Complement Alternat Med. 2012;2012:984024.

XCHT: Septic Shock, consider as treatment in

[Preventive effects of a traditional Chinese medicine \(Sho-saiko-to\) on septic shock symptoms; approached from heme metabolic disorders in endotoxemia.](#)

Sakaguchi S, Furusawa S, Iizuka Y.
Biol Pharm Bull. 2005 Jan;28(1):165-8.

XCHT: antidepressant actions

[Quantitative proteomics reveal antidepressant potential protein targets of xiaochaihutang in corticosterone induced model of depression.](#)

Zhang K, He M, Su D, Pan X, Li Y, Zhang H, Yang J, Wu C.
J Ethnopharmacol. 2019 Mar 1;231:438-445.

[Xiaochaihutang attenuates depressive/anxiety-like behaviors of social isolation-reared mice by regulating monoaminergic system, neurogenesis and BDNF expression.](#)

Ma J, Wang F, Yang J, Dong Y, Su G, Zhang K, Pan X, Ma P, Zhou T, Wu C.
J Ethnopharmacol. 2017 Aug 17;208:94-104.

[Serum metabolomics study of anti-depressive effect of Xiao-Chai-Hu-Tang on rat model of chronic unpredictable mild stress.](#)

Xiong Z, Yang J, Huang Y, Zhang K, Bo Y, Lu X, Su G, Ma J, Yang J, Zhao L, Wu C.
J Chromatogr B Analyt Technol Biomed Life Sci. 2016 Sep 1;1029-1030:28-35.
[Neurological mechanism of Xiaochaihutang's antidepressant-like effects to socially isolated adult rats.](#)
Ma J, Wu CF, Wang F, Yang JY, Dong YX, Su GY, Zhang K, Wang ZQ, Xu LW, Pan X, Zhou TS, Ma P, Song SJ.
J Pharm Pharmacol. 2016 Oct;68(10):1340-9.
[Antidepressant-like effects of Xiaochaihutang in a neuroendocrine mouse model of anxiety/depression.](#)
Zhang K, Yang J, Wang F, Pan X, Liu J, Wang L, Su G, Ma J, Dong Y, Xiong Z, Wu C.
J Ethnopharmacol. 2016 Dec 24;194:674-683.
[Xiaochaihutang prevents depressive-like behaviour in rodents by enhancing the serotonergic system.](#)
Su GY, Yang JY, Wang F, Xiong ZL, Hou Y, Zhang K, Song C, Ma J, Song SJ, Teng HF, Wu CF.
J Pharm Pharmacol. 2014 Jun;66(6):823-34.
[Antidepressant-like effects of Xiaochaihutang in a rat model of chronic unpredictable mild stress.](#)
Su GY, Yang JY, Wang F, Ma J, Zhang K, Dong YX, Song SJ, Lu XM, Wu CF.
J Ethnopharmacol. 2014 Feb 27;152(1):217-26.
[Analysis of main constituents and mechanisms underlying antidepressant-like effects of Xiaochaihutang in mice.](#)
Zhang K, Wang F, Yang JY, Wang LJ, Pang HH, Su GY, Ma J, Song SJ, Xiong ZL, Wu CF.
J Ethnopharmacol. 2015 Dec 4;175:48-57.

XCHT: obesity, consider for treatment of

[Soshiho-Tang Aqueous Extract Exerts Antiobesity Effects in High Fat Diet-Fed Mice and Inhibits Adipogenesis in 3T3-L1 Adipocytes.](#)

Yoo SR, Lee MY, Kang BK, Shin HK, Jeong SJ.
Evid Based Complement Alternat Med. 2016;2016:2628901. Epub 2016 Sep 29.

XCHT and Drug interactions/pharmacodynamics/Pharmacokinetics

[Chemical and Absorption Signatures of Xiao Chai Hu Tang.](#)

Du T, Zeng M, Chen L, Cao Z, Cai H, Yang G.
Rapid Commun Mass Spectrom. 2018 Mar 23.

[Development and validation of a UHPLC-MS/MS method for the simultaneous determination of five bioactive flavonoids in rat plasma and comparative pharmacokinetic study after oral administration of Xiaochaihu Tang and three compatibilities.](#)

Bo Y, Wang L, Wu X, Zhao L, Yang J, Xiong Z, Wu C.
J Sep Sci. 2017 May;40(9):1896-1905.

[Simultaneous determinations of 17 marker compounds in Xiao-Chai-Hu-Tang by LC-MS/MS: Application to its pharmacokinetic studies in mice.](#)

Sun R, Zeng M, Du T, Li L, Yang G, Hu M, Gao S.
J Chromatogr B Analyt Technol Biomed Life Sci. 2015 Oct 15;1003:12-21.

[An Ultra-Performance Liquid Chromatography Photodiode Array Detection Tandem Mass Spectrometric Method for Simultaneous Determination of Seven Major Bioactive Constituents in Xiaochaihutang and Its Application to Fourteen Compatibilities Study.](#)

Wang L, Wu C, Zhao L, Lu X, Wang F, Yang J, Xiong Z.
J Chromatogr Sci. 2015 Oct;53(9):1570-6.

[Separation and identification of multiple constituents in Xiao Chai Hu Decoction \(Sho-saiko-to\) by bioactivity-guided fractionation combined with LC-ESI-QTOFMS/MS.](#)

Wu Y, Peng Y, Song C, Li L, Ma H, Li D, Wang F, Yang J, Song S, Wu C.
Biomed Chromatogr. 2015 Aug;29(8):1146-66.

[Systems pharmacology-based approach for dissecting the addition and subtraction theory of traditional Chinese medicine: An example using Xiao-Chaihu-Decoction and Da-Chaihu-Decoction.](#)

Li B, Tao W, Zheng C, Shar PA, Huang C, Fu Y, Wang Y.
Comput Biol Med. 2014 Oct;53:19-29.

[\[Study on fingerprint of xiaochaihu granules sold in the market\].](#)

Yan L, Lin LF, Zhang H, Dang XF, Ni J.

Zhongguo Zhong Yao Za Zhi. 2013 Oct;38(20):3498-501. Chinese.

[Extraction efficiency of shosaikoto \(xiaochaihu tang\) and investigation of the major constituents in the residual crude drugs.](#)

Sumino M, Saito Y, Ikegami F, Hirasaki Y, Namiki T.

Evid Based Complement Alternat Med. 2012;2012:890524.

[Change in tolbutamide permeability in rat jejunum and Caco-2 cells by Sho-saiko-to \(Xiao Chai Hu Tang\), a Chinese traditional medicine.](#)

Nishimura N, Uemura T, Iwamoto K, Naora K.

J Pharm Pharmacol. 2010 May;62(5):651-7.

[Comparative pharmacokinetics of baicalin and wogonoside by liquid chromatography-mass spectrometry after oral administration of Xiaochaihu Tang and Radix scutellariae extract to rats.](#)

Zhu Z, Zhao L, Liu X, Chen J, Zhang H, Zhang G, Chai Y.

J Chromatogr B Analyt Technol Biomed Life Sci. 2010 Aug 15;878(24):2184-90.

[Transport and metabolism of flavonoids from Chinese herbal remedy Xiaochaihu- tang across human intestinal Caco-2 cell monolayers.](#)

Dai JY, Yang JL, Li C.

Acta Pharmacol Sin. 2008 Sep;29(9):1086-93.

[Blockade of the dioxin pathway by herbal medicine Formula Bupleuri Minor: identification of active entities for suppression of AhR activation.](#)

Kasai A, Hiramatsu N, Hayakawa K, Yao J, Kitamura M.

Biol Pharm Bull. 2008 May;31(5):838-46.

[Simultaneous quantification of multiple licorice flavonoids in rat plasma.](#)

Li L, Liang S, Du F, Li C.

J Am Soc Mass Spectrom. 2007 Apr;18(4):778-82.

[Liquid chromatography with tandem mass spectrometry for the simultaneous determination of baicalein, baicalin, oroxylin A and wogonin in rat plasma.](#)

Kim YH, Jeong DW, Paek IB, Ji HY, Kim YC, Sohn DH, Lee HS.

J Chromatogr B Analyt Technol Biomed Life Sci. 2006 Dec 5;844(2):261-7.

[Characterization and quantification of eight water-soluble constituents in tubers of Pinellia ternata and in tea granules from the Chinese multiherb remedy Xiaochaihu-tang.](#)

Chen P, Li C, Liang S, Song G, Sun Y, Shi Y, Xu S, Zhang J, Sheng S, Yang Y, Li M.

J Chromatogr B Analyt Technol Biomed Life Sci. 2006 Nov 7;843(2):183-93.

[\[Effects of Chinese herbal medicines on intestinal drug absorption\].](#)

Nishimura N.

Yakugaku Zasshi. 2005 Apr;125(4):363-9. Review. Japanese.

[The in-vivo effects of sho-saiko-to, a traditional Chinese herbal medicine, on two cytochrome P450 enzymes \(1A2 and 3A\) and xanthine oxidase in man.](#)

Saruwatari J, Nakagawa K, Shindo J, Nachi S, Echizen H, Ishizaki T.

J Pharm Pharmacol. 2003 Nov;55(11):1553-9.

[Sho-saiko-to and Saiko-keisi-to, the traditional Chinese and Japanese herbal medicines, altered hepatic drug-metabolizing enzymes in mice and rats when administered orally for a long time.](#)

Nose M, Tamura M, Ryu N, Mizukami H, Ogihara Y.

J Pharm Pharmacol. 2003 Oct;55(10):1419-26.

[Studies on interactions between traditional herbal and western medicines. V. effects of Sho-saiko-to \(Xiao-Cai-hu-Tang\) on the pharmacokinetics of carbamazepine in rats.](#)

Ohnishi N, Okada K, Yoshioka M, Kuroda K, Nagasawa K, Takara K, Yokoyama T.

Biol Pharm Bull. 2002 Nov;25(11):1461-6.

[Effects of sho-saiko-to \(xiao chai hu tang\), a Chinese traditional medicine, on the gastric function and absorption of tolbutamide in rats.](#)

Nishimura N, Naora K, Hirano H, Iwamoto K.

Yakugaku Zasshi. 2001 Feb;121(2):153-9.

[A Chinese traditional medicine, sho-saiko-to \(xiao-chaihu-tang\), reduces the bioavailability of tolbutamide after oral administration in rats.](#)

Nishimura N, Naora K, Hirano H, Iwamoto K.

Am J Chin Med. 1999;27(3-4):355-63.

[Effects of Sho-saiko-to on the pharmacokinetics and pharmacodynamics of tolbutamide in rats.](#)

Nishimura N, Naora K, Hirano H, Iwamoto K.

J Pharm Pharmacol. 1998 Feb;50(2):231-6.

[Stereochemistry and putative origins of flavanones found in post-administration urine of the traditional Chinese remedies shosaiko-to and daisaiko-to.](#)

Li C, Homma M, Ohkura N, Oka K.

Chem Pharm Bull (Tokyo). 1998 May;46(5):807-11.

[Characteristics of delayed excretion of flavonoids in human urine after administration of Shosaiko-to, a herbal medicine.](#)

Li C, Homma M, Oka K.

Biol Pharm Bull. 1998 Dec;21(12):1251-7.

[Induction of cytochrome P-450-linked monooxygenase system in rat liver microsomes by xiao-chaihu-tang.](#)

Obnishi T, Yoneyama H, Hamamoto T, Ishida T, Takahara J, Ichikawa Y.

Am J Chin Med. 1996;24(2):143-51. *(unable to obtain full article from TAMU– request declined)*

[Influence of time of administration of a Shosaiko-to extract granule on blood concentration of its active constituents.](#)

Nishioka Y, Kyotani S, Miyamura M, Kusunose M.

Chem Pharm Bull (Tokyo). 1992 May;40(5):1335-7.

XCHT: miscellaneous

[Modern use of Chinese herbal formulae from Shang-Han Lun.](#)

Chen FP, Chen FJ, Jong MS, Tsai HL, Wang JR, Hwang SJ.

Chin Med J (Engl). 2009 Aug 20;122(16):1889-94.

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