

Citations and Reference Literature: Licorice

Citations

1. Chen J, Chen T. *Gan cao (Radix glycyrrhizae)*. Chinese Medical Herbology and Pharmacology. City of Industry, Calif: Art of Medicine Press Inc; 2004:867-872.
2. Cinatl J, Morgenstern B, Bauer G et al. Glycyrrhizin, an active component of liquorice roots, and replication of SARS-associated coronavirus. *Lancet* 2003;361:2045-2046.
3. Hoever G, Baltina L, Michaelis M et al. Antiviral activity of glycyrrhizic acid derivatives against SARS-coronavirus. *J Med Chem* 2005;48:1256-1259.
4. ESCOP. *Liquiritiae radix*. ESCOP Monographs: the Scientific Foundation for Herbal Medicinal Products. 2nd ed. Exeter, UK: European Scientific Cooperative on Phytotherapy and Thieme; 2003:297-305.
5. BHMA. Liquorice root. In: Bradley P, ed. British Herbal Compendium. Bournemouth, UK: British Herbal Medical Association; 1992:145-148.
6. WHO. *Radix glycyrrhizae*. WHO Monographs on Selected Medicinal Plants. 1 vol. Geneva: World Health Organization; 1999:183-194.
7. Blumenthal M, Busse W, Goldberg A et al. The Complete German Commission E Monographs. Austin, Texas: American Botanical Council: Integrative Medicine Communications; 1998.
8. Bensky D, Clavey S, Stoger E, Gamble A. *Gan cao*. Chinese Herbal Medicine: Materia Medica. 3rd ed. Seattle: Eastland Press; 2004:732-735.
9. Pelsel HE, Willebrands AF, Frenkel M et al. Comparative study of the use of glycyrrhizinic and glycyrrhetic acids in Addison's disease. *Metabolism* 1953;2:322-334.
10. Borst JG, Ten Holt SP, De Vries LA, Molhuysen JA. Synergistic action of liquorice and cortisone in Addison's and Simmonds's disease. *Lancet* 1953;1:657-663.
11. De W Cayley FE. Potassium deficiency in p-aminosalicylic acid therapy: cardiac and paralytic effects. *Lancet* 1950;255:447-448.
12. Strong JA. Serum potassium deficiency during treatment with sodium P.A.S. and liquorice extract. *Br Med J* 1951;4738:998-1002.
13. Ulick S, Levine LS, Gunczler P et al. A syndrome of apparent mineralocorticoid excess associated with defects in the peripheral metabolism of cortisol. *J Clin Endocrinol Metab* 1979;49:757-764.
14. White PC, Mune T, Agarwal AK. 11 β -Hydroxysteroid dehydrogenase and the syndrome of apparent mineralocorticoid excess. *Endocr Rev* 1997;18:135-156.
15. Benediktsson R, Edwards CR. Apparent mineralocorticoid excess. *J Hum Hypertens* 1994;8:371-375.
16. Monder C, Shackleton CH, Bradlow HL et al. The syndrome of apparent mineralocorticoid excess: its association with 11 β -dehydrogenase and 5 β -reductase deficiency and some consequences for corticosteroid metabolism. *J Clin Endocrinol Metab* 1986;63:550-557.
17. Stewart PM, Wallace AM, Valentino R et al. Mineralocorticoid activity of liquorice: 11-beta-hydroxysteroid dehydrogenase deficiency comes of age. *Lancet* 1987;2:821-824.
18. Stewart PM, Whorwood CB, Walker BR. Steroid hormones and hypertension: the cortisol-cortisone shuttle. *Steroids* 1993;58:614-620.
19. Walker BR, Edwards CR. Licorice-induced hypertension and syndromes of apparent mineralocorticoid excess. *Endocrinol Metab Clin North Am* 1994;23:359-377.
20. Monder C, Stewart PM, Lakshmi V et al. Licorice inhibits corticosteroid 11 β -dehydrogenase of rat kidney and liver: in vivo and in vitro studies. *Endocrinology* 1989;125:1046-1053.
21. MacKenzie MA, Hoefnagels WH, Jansen RW et al. The influence of glycyrrhetic acid on plasma cortisol and cortisone in healthy young volunteers. *J Clin Endocrinol Metab* 1990;70:1637-1643.
22. Ojima M, Satoh K, Gomibuchi T et al. [The inhibitory effects of glycyrrhizin and glycyrrhetic acid on the metabolism of cortisol and prednisolone: in vivo and in vitro studies]. *Nippon Naibunpi Gakkai Zasshi* 1990;66:584-596.
23. Kato H, Kanaoka M, Yano S, Kobayashi M. 3-Monoglucuronyl-glycyrrhetic acid is a major metabolite that causes licorice-induced pseudoaldosteronism. *J Clin Endocrinol Metab* 1995;80:1929-1933.
24. Palermo M, Shackleton CH, Mantero F, Stewart PM. Urinary free cortisone and the assessment of 11 β -hydroxysteroid dehydrogenase activity in man. *Clin Endocrinol (Oxf)* 1996;45:605-611.
25. Sardi A, Geda C, Nerici L, Bertello P. [Rhabdomyolysis and arterial hypertension caused by apparent excess of mineralocorticoids: a case report]. *Ann Ital Med Int* 2002;17:126-129.
26. Serra A, Uehlinger DE, Ferrari P et al. Glycyrrhetic acid decreases plasma potassium concentrations in patients with anuria. *J Am Soc Nephrol* 2002;13:191-196.

Citations and Reference Literature: Licorice

27. Van Uum SH, Lenders JW, Hermus AR. Cortisol, 11 β -hydroxysteroid dehydrogenases, and hypertension. *Semin Vasc Med* 2004;4:121-128.
28. Mowrey D. Licorice root (Appendix A). The Scientific Validation of Herbal Medicine. New Canaan, Conn: Keats; 1986:294-295.
29. Ruschitzka F, Quaschning T, Noll G et al. Endothelin 1 type A receptor antagonism prevents vascular dysfunction and hypertension induced by 11 β -hydroxysteroid dehydrogenase inhibition: role of nitric oxide. *Circulation* 2001;103:3129-3135.
30. Negro A, Rossi E, Regolisti G, Perazzoli F. Liquorice-induced sodium retention: merely an acquired condition of apparent mineralocorticoid excess? A case report. *Ann Ital Med Int* 2000;15:296-300.
31. Seckl JR. 11 β -Hydroxysteroid dehydrogenase in the brain: a novel regulator of glucocorticoid action? *Front Neuroendocrinol* 1997;18:49-99.
32. Gomez-Sanchez EP, Cox D, Foecking M et al. 11 β -Hydroxysteroid dehydrogenases of the choriocarcinoma cell line JEG-3 and their inhibition by glycyrrhetic acid and other natural substances. *Steroids* 1996;61:110-115.
33. Panarelli M, Holloway CD, Fraser R et al. Glucocorticoid receptor polymorphism, skin vasoconstriction, and other metabolic intermediate phenotypes in normal human subjects. *J Clin Endocrinol Metab* 1998;83:1846-1852.
34. Finken MJ, Andrews RC, Andrew R, Walker BR. Cortisol metabolism in healthy young adults: sexual dimorphism in activities of A-ring reductases, but not 11 β -hydroxysteroid dehydrogenases. *J Clin Endocrinol Metab* 1999;84:3316-3321.
35. Tamura Y, Nishikawa T, Yamada K et al. Effects of glycyrrhetic acid and its derivatives on 8 α -5 α - and 5 β -reductase in rat liver. *Arzneimittelforschung* 1979;29:647-649.
36. Iyer RB, Binstock JM, Schwartz IS et al. Human hepatic cortisol reductase activities: enzymatic properties and substrate specificities of cytosolic cortisol delta 4-5 β -reductase and dihydrocortisol-3 α -oxidoreductase(s). *Steroids* 1990;55:495-500.
37. Raven PW, Taylor NF. Evidence for independent modulation of human 11-HSD and 5 α /5 β reductase activities. *Endocr Res* 1996;22:811-815.
38. Iki K, Miyamori I, Hatakeyama H et al. The activities of 5 β -reductase and 11 β -hydroxysteroid dehydrogenase in essential hypertension. *Steroids* 1994;59:656-660.
39. Abel SM, Back DJ, Maggs JL, Park BK. Cortisol metabolism in vitro. II. Species difference. *J Steroid Biochem Mol Biol* 1993;45:445-453.
40. Latif SA, Conca TJ, Morris DJ. The effects of the licorice derivative, glycyrrhetic acid, on hepatic 3 α - and 3 β -hydroxysteroid dehydrogenases and 5 α - and 5 β -reductase pathways of metabolism of aldosterone in male rats. *Steroids* 1990;55:52-58.
41. Baker ME. Licorice and enzymes other than 11 β -hydroxysteroid dehydrogenase: an evolutionary perspective. *Steroids* 1994;59:136-141.
42. Baker ME. Evolution of enzymatic regulation of prostaglandin action: novel connections to regulation of human sex and adrenal function, antibiotic synthesis and nitrogen fixation. *Prostaglandins* 1991;42:391-410.
43. Cantelli-Forti G, Maffei F, Hrelia P et al. Interaction of licorice on glycyrrhizin pharmacokinetics. *Environ Health Perspect* 1994;102 Suppl 9:65-68.
44. Hattori M, Sakamoto T, Kobashi K, Namba T. Metabolism of glycyrrhizin by human intestinal flora. *Planta Med* 1983;48:38-42.
45. Hattori M, Sakamoto T, Yamagishi T et al. Metabolism of glycyrrhizin by human intestinal flora. II. Isolation and characterization of human intestinal bacteria capable of metabolizing glycyrrhizin and related compounds. *Chem Pharm Bull (Tokyo)* 1985;33:210-217.
46. Akao T, Hayashi T, Kobashi K et al. Intestinal bacterial hydrolysis is indispensable to absorption of 18 β -glycyrrhetic acid after oral administration of glycyrrhizin in rats. *J Pharm Pharmacol* 1994;46:135-137.
47. Zhang YD, Lorenzo B, Reidenberg MM. Inhibition of 11 β -hydroxysteroid dehydrogenase obtained from guinea pig kidney by furosemide, naringenin and some other compounds. *J Steroid Biochem Mol Biol* 1994;49:81-85.
48. Song D, Lorenzo B, Reidenberg MM. Inhibition of 11 β -hydroxysteroid dehydrogenase by gossypol and bioflavonoids. *J Lab Clin Med* 1992;120:792-797.
49. Krahenbuhl S, Hasler F, Frey BM et al. Kinetics and dynamics of orally administered 18 β -glycyrrhetic acid in humans. *J Clin Endocrinol Metab* 1994;78:581-585.
50. Bernardi M, D'Intino PE, Trevisani F et al. Effects of prolonged ingestion of graded doses of licorice by healthy volunteers. *Life Sci* 1994;55:863-872.
51. Armanini D, Bonanni G, Palermo M. Reduction of serum testosterone in men by licorice [letter]. *N Engl J Med* 1999;341:1158.
52. Armanini D, Bonanni G, Mattarello MJ et al. Licorice consumption and serum testosterone in healthy man. *Exp Clin Endocrinol Diabetes* 2003;111:341-343.
53. Josephs RA, Guinn JS, Harper ML, Askari F. Liquorice consumption and salivary testosterone concentrations. *Lancet* 2001;358:1613-1614.
54. Sakamoto K, Wakabayashi K. Inhibitory effect of glycyrrhetic acid on testosterone production in rat gonads. *Endocrinol Jpn* 1988;35:333-342.

Citations and Reference Literature: Licorice

55. Armanini D, Fiore C, Mattarello MJ et al. History of the endocrine effects of licorice. *Exp Clin Endocrinol Diabetes* 2002;110:257-261.
56. Fu Y, Hsieh TC, Guo J et al. Licochalcone-A, a novel flavonoid isolated from licorice root (*Glycyrrhiza glabra*), causes G2 and late-G1 arrests in androgen-independent PC-3 prostate cancer cells. *Biochem Biophys Res Commun* 2004;322:263-270.
57. Maggiolini M, Statti G, Vivacqua A et al. Estrogenic and antiproliferative activities of isoliquiritigenin in MCF7 breast cancer cells. *J Steroid Biochem Mol Biol* 2002;82:315-322.
58. Mori H, Niwa K, Zheng Q et al. Cell proliferation in cancer prevention; effects of preventive agents on estrogen-related endometrial carcinogenesis model and on an in vitro model in human colorectal cells. *Mutat Res* 2001;480/481:201-207.
59. Rafi MM, Rosen RT, Vassil A et al. Modulation of bcl-2 and cytotoxicity by licochalcone-A, a novel estrogenic flavonoid. *Anticancer Res* 2000;20:2653-2658.
60. Somjen D, Katzburg S, Vaya J et al. Estrogenic activity of glabridin and glabrene from licorice roots on human osteoblasts and prepubertal rat skeletal tissues. *J Steroid Biochem Mol Biol* 2004;91:241-246.
61. Somjen D, Knoll E, Vaya J et al. Estrogen-like activity of licorice root constituents: glabridin and glabrene, in vascular tissues in vitro and in vivo. *J Steroid Biochem Mol Biol* 2004;91:147-155.
62. Tamir S, Eizenberg M, Somjen D et al. Estrogenic and antiproliferative properties of glabridin from licorice in human breast cancer cells. *Cancer Res* 2000;60:5704-5709.
63. Tamir S, Eizenberg M, Somjen D et al. Estrogen-like activity of glabrene and other constituents isolated from licorice root. *J Steroid Biochem Mol Biol* 2001;78:291-298.
64. Sigurjonsdottir HA, Axelson M, Johannsson G et al. Liquorice in moderate doses does not affect sex steroid hormones of biological importance although the effect differs between the genders. *Horm Res* 2006;65:106-110.
65. Kent UM, Aviram M, Rosenblat M, Hollenberg PF. The licorice root derived isoflavan glabridin inhibits the activities of human cytochrome P450S 3A4, 2B6, and 2C9. *Drug Metab Dispos* 2002;30:709-715.
66. Jeong HG, You HJ, Park SJ et al. Hepatoprotective effects of 18 β -glycyrrhetic acid on carbon tetrachloride-induced liver injury: inhibition of cytochrome P450 2E1 expression. *Pharmacol Res* 2002;46:221-227.
67. Paolini M, Pozzetti L, Sapone A, Cantelli-Forti G. Effect of licorice and glycyrrhizin on murine liver CYP-dependent monooxygenases. *Life Sci* 1998;62:571-582.
68. Paolini M, Barillari J, Broccoli M et al. Effect of liquorice and glycyrrhizin on rat liver carcinogen metabolizing enzymes. *Cancer Lett* 1999;145:35-42.
69. Budzinski JW, Foster BC, Vandenhoeck S, Arnason JT. An in vitro evaluation of human cytochrome P450 3A4 inhibition by selected commercial herbal extracts and tinctures. *Phytomedicine* 2000;7:273-282.
70. Moon A, Kim SH. Effect of *Glycyrrhiza glabra* roots and glycyrrhizin on the glucuronidation in rats. *Planta Med* 1997;63:115-119.
71. Ismail MG, Stanca C, Ha HR et al. Interactions of glycyrrhizin with organic anion transporting polypeptides of rat and human liver. *Hepatol Res* 2003;26:343-347.
72. Tamaya T, Sato S, Okada HH. Possible mechanism of steroid action of the plant herb extracts glycyrrhizin, glycyrrhetic acid, and paeoniflorin: inhibition by plant herb extracts of steroid protein binding in the rabbit. *Am J Obstet Gynecol* 1986;155:1134-1139.
73. Tamaya T, Sato S, Okada H. Inhibition by plant herb extracts of steroid bindings in uterus, liver and serum of the rabbit. *Acta Obstet Gynecol Scand* 1986;65:839-842.
74. Mu Y, Zhang J, Zhang S et al. Traditional Chinese medicines Wu Wei Zi (*Schisandra chinensis* Baill) and Gan Cao (*Glycyrrhiza uralensis* Fisch) activate pregnane X receptor and increase warfarin clearance in rats. *J Pharmacol Exp Ther* 2006;316:1369-1377.
75. Russell RI, Morgan RJ, Nelson LM. Studies on the protective effect of deglycyrrhinated liquorice against aspirin (ASA) and ASA plus bile acid-induced gastric mucosal damage, and ASA absorption in rats. *Scand J Gastroenterol Suppl* 1984;92:97-100.
76. Dehpour AR, Zolfaghari ME, Samadian T, Vahedi Y. The protective effect of liquorice components and their derivatives against gastric ulcer induced by aspirin in rats. *J Pharm Pharmacol* 1994;46:148-149.
77. Morgan RJ, Nelson LM, Russell RI, Docherty C. The protective effect of deglycyrrhinated liquorice against aspirin and aspirin plus bile acid-induced gastric mucosal damage, and its influence on aspirin absorption in rats. *J Pharm Pharmacol* 1983;35:605-607.
78. Goso Y, Ogata Y, Ishihara K, Hotta K. Effects of traditional herbal medicine on gastric mucin against ethanol-induced gastric injury in rats. *Comp Biochem Physiol C Pharmacol Toxicol Endocrinol* 1996;113:17-21.
79. Rees WD, Rhodes J, Wright JE et al. Effect of deglycyrrhizinated liquorice on gastric mucosal damage by aspirin. *Scand J Gastroenterol* 1979;14:605-607.
80. Prichard PJ, Hawkey CJ. Aspirin and gastroduodenal injury. *Dig Dis* 1989;7:28-38.
81. Kimmey MB. Cardioprotective effects and gastrointestinal risks of aspirin: maintaining the delicate balance. *Am J Med* 2004;117 Suppl 5A:72S-78S.

Citations and Reference Literature: Licorice

82. He JX, Akao T, Nishino T, Tani T. The influence of commonly prescribed synthetic drugs for peptic ulcer on the pharmacokinetic fate of glycyrrhizin from Shaoyao-Gancao-tang. *Biol Pharm Bull* 2001;24:1395-1399.
83. Krahnenbuhl S, Hasler F, Krapf R. Analysis and pharmacokinetics of glycyrrhizic acid and glycyrrhetic acid in humans and experimental animals. *Steroids* 1994;59:121-126.
84. Hatano T, Kusuda M, Inada K et al. Effects of tannins and related polyphenols on methicillin-resistant *Staphylococcus aureus*. *Phytochemistry* 2005;66:2047-2055.
85. Zhao WH, Hu ZQ, Okubo S et al. Mechanism of synergy between epigallocatechin gallate and beta-lactams against methicillin-resistant *Staphylococcus aureus*. *Antimicrob Agents Chemother* 2001;45:1737-1742.
86. Morgan AG, McAdam WA, Pacsoo C, Darnborough A. Comparison between cimetidine and Caved-S in the treatment of gastric ulceration, and subsequent maintenance therapy. *Gut* 1982;23:545-551.
87. D'Imperio N, Giuliani Piccari G, Sarti F et al. Double-blind trial in duodenal and gastric ulcers: cimetidine and deglycyrrhizinated liquorice. *Acta Gastroenterol Belg* 1978;41:427-434.
88. Cook PJ, Vincent-Brown A, Lewis SI et al. Carbenoxolone (duogastrone) and cimetidine in the treatment of duodenal ulcer—a therapeutic trial. *Scand J Gastroenterol Suppl* 1980;65:93-101.
89. Bennett A, Clark-Wibberley T, Stamford IF, Wright JE. Aspirin-induced gastric mucosal damage in rats: cimetidine and deglycyrrhizinated liquorice together give greater protection than low doses of either drug alone. *J Pharm Pharmacol* 1980;32:151.
90. Whorwood CB, Sheppard MC, Stewart PM. Licorice inhibits 11 β -hydroxysteroid dehydrogenase messenger ribonucleic acid levels and potentiates glucocorticoid hormone action. *Endocrinology* 1993;132:2287-2292.
91. Chen MF, Shimada F, Kato H et al. Effect of oral administration of glycyrrhizin on the pharmacokinetics of prednisolone. *Endocrinol Jpn* 1991;38:167-174.
92. Teelucksingh S, Mackie AD, Burt D et al. Potentiation of hydrocortisone activity in skin by glycyrrhetic acid. *Lancet* 1990;335:1060-1063.
93. Hundertmark S, Buhler H, Rudolf M et al. Inhibition of 11 β -hydroxysteroid dehydrogenase activity enhances the antiproliferative effect of glucocorticosteroids on MCF-7 and ZR-75-1 breast cancer cells. *J Endocrinol* 1997;155:171-180.
94. Mills S, Bone K. Principles and Practice of Phytotherapy. Edinburgh: Churchill Livingstone; 2000.
95. Chandler RF. *Glycyrrhiza glabra*. In: DeSmet PA, Keller K, Hansel R, Chandler RF, eds. Adverse Effects of Herbal Drugs. 3 vol. Berlin: Springer Verlag; 1997:67-87.
96. Kullak-Ublick GA, Ismair MG, Steiger B et al. Organic anion-transporting polypeptide B (OATP-B) and its functional comparison with three other OATPs of human liver. *Gastroenterology* 2001;120:525-533.
97. Harada T, Ohtaki E, Misu K et al. Congestive heart failure caused by digitalis toxicity in an elderly man taking a licorice-containing Chinese herbal laxative. *Cardiology* 2002;98:218.
98. Stockley I. Stockley's Drug Interactions. 6th ed. London: Pharmaceutical Press; 2002.
99. Finnegan TP, Spence JD, Cape RD. Potassium-sparing diuretics: interaction with digoxin in elderly men. *J Am Geriatr Soc* 1984;32:129-131.
100. Wofford JL, Ettinger WH. Risk factors and manifestations of digoxin toxicity in the elderly. *Am J Emerg Med* 1991;9:11-15; discussion 33-14.
101. Misiaszek B, Heckman GA, Merali F et al. Digoxin prescribing for heart failure in elderly residents of long-term care facilities. *Can J Cardiol* 2005;21:281-286.
102. Schwinger RH, Erdmann E. Heart failure and electrolyte disturbances. *Methods Find Exp Clin Pharmacol* 1992;14:315-325.
103. Shintani S, Murase H, Tsukagoshi H, Shiigai T. Glycyrrhizin (licorice)-induced hypokalemic myopathy: report of 2 cases and review of the literature. *Eur Neurol* 1992;32:44-51.
104. Chubachi A, Wakui H, Asakura K et al. Acute renal failure following hypokalemic rhabdomyolysis due to chronic glycyrrhizic acid administration. *Intern Med* 1992;31:708-711.
105. Elinav E, Chajek-Shaul T. Licorice consumption causing severe hypokalemic paralysis. *Mayo Clin Proc* 2003;78:767-768.
106. Quaschning T, Ruschitzka F, Niggli B et al. Influence of aldosterone vs. endothelin receptor antagonism on renovascular function in liquorice-induced hypertension. *Nephrol Dial Transplant* 2001;16:2146-2151.
107. Quaschning T, Ruschitzka F, Shaw S, Luscher TF. Aldosterone receptor antagonism normalizes vascular function in liquorice-induced hypertension. *Hypertension* 2001;37:801-805.
108. Soro A, Ingram MC, Tonolo G et al. Evidence of coexisting changes in 11 β -hydroxysteroid dehydrogenase and 5 β -reductase activity in subjects with untreated essential hypertension. *Hypertension* 1995;25:67-70.
109. Gromotka R, Bruhl W, Jr., Schmid E. Improved treatment of chronic pyelonephritis with nitrofurantoin in combination with deglycyrrhizinated liquorice. *Arzneimittelforschung* 1972;22:627-629.

Citations and Reference Literature: Licorice

110. Datla R, Rao SR, Murthy KJ. Excretion studies of nitrofurantoin and nitrofurantoin with deglycyrrhizinated liquorice. Indian J Physiol Pharmacol 1981;25:59-63.
111. Razina TG, Zueva EP, Amosova EN, Krylova SG. [Medicinal plant preparations used as adjuvant therapeutics in experimental oncology]. Eksp Klin Farmakol 2000;63:59-61.
112. Walker BR, Connacher AA, Lindsay RM et al. Carbenoxolone increases hepatic insulin sensitivity in man: a novel role for 11-oxosteroid reductase in enhancing glucocorticoid receptor activation. J Clin Endocrinol Metab 1995;80:3155-3159.
113. Fujiwara Y, Kikkawa R, Nakata K et al. Hypokalemia and sodium retention in patients with diabetes and chronic hepatitis receiving insulin and glycyrrhizin. Endocrinol Jpn 1983;30:243-249.
114. Shinada M, Azuma M, Kawai H et al. Enhancement of interferon-gamma production in glycyrrhizin-treated human peripheral lymphocytes in response to concanavalin A and to surface antigen of hepatitis B virus. Proc Soc Exp Biol Med 1986;181:205-210.
115. Abe Y, Ueda T, Kato T, Kohli Y. [Effectiveness of interferon, glycyrrhizin combination therapy in patients with chronic hepatitis C]. Nippon Rinsho 1994;52:1817-1822.
116. Fujisawa K. Interferon therapy in hepatitis C virus (HCV) induced chronic hepatitis: clinical significance of pretreatment with glycyrrhizine. Trop Gastroenterol 1991;12:176-179.
117. Dai JH, Iwatani Y, Ishida T et al. Glycyrrhizin enhances interleukin-12 production in peritoneal macrophages. Immunology 2001;103:235-243.
118. Eisenburg J. [Treatment of chronic hepatitis B. Part 2. Effect of glycyrrhizic acid on the course of illness]. Fortschr Med 1992;110:395-398.
119. Cumming AM, Boddy K, Brown JJ et al. Severe hypokalaemia with paralysis induced by small doses of liquorice. Postgrad Med J 1980;56:526-529.
120. Tanaka S, Kuwai Y, Tabata M. Isolation of monoamine oxidase inhibitors from *Glycyrrhiza uralensis* roots and the structure-activity relationship. Planta Med 1987;53:5-8.
121. Ofir R, Tamir S, Khatib S, Vaya J. Inhibition of serotonin re-uptake by licorice constituents. J Mol Neurosci 2003;20:135-140.
122. Francischetti IM, Monteiro RQ, Guimaraes JA. Identification of glycyrrhizin as a thrombin inhibitor. Biochem Biophys Res Commun 1997;235:259-263.
123. Tawata M, Yoda Y, Aida K et al. Anti-platelet action of GU-7, a 3-arylcoumarin derivative, purified from *glycyrrhizae radix*. Planta Med 1990;56:259-263.