

Literaturliste

Antivirale Effekte der Süßholzwurzel

Jens Bielenberg

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[1] Pompei R, Flore O, Marccialis M.A., Pani A, Loddo B. Glycyrrhizic acid inhibits virus growth and inactivates virus particles. *Nature* 1979, 281: 689-90.

[2] Crance J.M., Leveque F, Biziagos E. Studies on the mechanism of action of glycyrrhizin against hepatitis C virus replication. *Antiviral research* 1994, 2: 63-76

[3] Pompei R., Pani A, Flore, O, Loddo B. Antiviral activity of glycyrrhizic acid *Experientia* 1980, 36: 304.

[4] Vichkanowa VA, Goryunova LV. *C.A.*1973,78: 155107.

[5] Badam L. In Vitro antiviral activity of indigenous glycyrrhizin, licorice and glycyrrhizic acid on Japanese encephalitis Virus. *J Commun Dis* 1979, 29(2) : 91-99.

[6] Harada S, Maekawa T, Haneda E, Morikawa Y, Nagata N, Ohtsuki K. Biochemical characterization of recombinant HIV-1-reverse Transcriptase (rRT) as a glycyrrhizin-binding Protein and the CK-II-mediated stimulation of rRT activity potently inhibited by glycyrrhetic acid derivative. *Biological and Pharmaceutical Bulletin* 1998, 21(12): 1282-85.

[7] Wildhirt, E. Ein neuer Weg in der Behandlung chronisch entzündlicher Lebererkrankungen: Glycyrrhizinsäure. *Arzt und Krankenhaus* 1988,12: 383-7.

[8] Kiso Y, Tohkin M, Hikino H, Hattori M, Sakamoto T, Namba T. Mechanism of antihepatotoxic Activity of Glycyrrhizin. I:Effect on free radical Generation and Lipid Peroxidation. *Planta Med* 1984,50 : 298-302.

[9] Abe N, Ebina T, Ishida N. Interferon Induction by Glycyrrhizin and Glycyrrhetic acid in Mice. 1982 *Microbiol Immunol*, 26 (6) : 535-539.

[10] Shibata S. A drug over the Millennia Pharmacognosy, Chemistry and Pharmacology of Licorice 2000 *Yakugaku Zasshi* 120(10), 849-862.

[11] Ashfad UA, Qasim M, Yousaf MZ et al. Glycyrrhizin as antiviral agent against Hepatitis C Virus. *J Tranl Med* 2011,18(9):112.

[12] Curelli F., Friedman-Kein A., Flore O.: Glycyrrhizic acid alters Kaposi-Sarcoma-associated herpesvirus latency, triggering p53 mediated apoptosis in transformed B lymphocytes. *The Journal of Clinical Investigation* 2005, 115 (3) 642–650.

[13] Laconi S, Madeddu M, Pompei R. Autophagy Activation and antiviral activity by a Licorice Triterpen *Phytother Res* 2014 ,28(12):1890-2.

- [14] Pompei R, Laconi S, Ingianni A. Antiviral properties of Glycyrrizic acid and its semisynthetic derivatives. *Mini Rev Med Chem* 2009 , 9(8):996-1001.
- [15] Cinatl J, Michaelis M, Doerr HW. The threat of avian influenza A (H5N1). Part I: Epidemiologic concerns and virulence determinants. *Med Microbiol Immunol.* 2007;196:181–190.
- [16] Antiviral Spot of Excellence “ (ASPEX) in Wien, 2011 Wolkersdorfer A; et al. Glycyrrhizin inhibits influenza A virus uptake into the cell. *Antivir. Res* 2009 83(2):171
- [17] Radulovic A , Rossini A et al. CD69 reguliert durch Expression der Chemokine CCL-1 und CCL-19 Retention von Lymphozyten in Mesenterischen Lymphknoten. *Z Gastroenterol* 2012 Doi :10.1055 /s - 0032.
- [18] Cheel J, et al. Licorice infusion: Chemical profile and effects on the activation of human lymphocytes. *Pharmacogn Mag* 2010, 6(21): 26-33.
- [19] Cinatl J, Morgenstern B, Bauer G, Chandra P, Rabenau H, Doerr HW. Glycyrrhizin, an active component of licorice roots, and replication of SARS-associated coronavirus. *Lancet* 2003,361(9374) :2045-2046.
- [20] Lazo P, Santos C. Interference with p 53 functions in human viral infections, a target for novel antiviral strategies? *Rev Med Vir* 2011, 21(5).
- [21] Aloni Grinstein R, Charni-Nata M, Solomon H, Rotter V. P53 and the viral connection: back into the future. *Rev Canc* 2016,10(6).
- [22] Hao Z, Fu F, Cao L, Guo L, Liu J, Xue M, Feng L. Tumor suppressor p53 inhibits porcine epidemic diarrhea virus infection via interferon –mediated antiviral immunity. *Mol Immunol* 2019 ,108 :68 -74.
- [23] Yu JY, HA JY, Kim KM et al. Anti-inflammatory activities of licorice extract and its active compounds, glycyrrhizic acid, liquiritin and liquiritigenin, in BV2-cells and mice liver. *Molecules* 2015, 20(7):3041-54.
- [24] Yang BS, Ma Y-J, Wang Y, et al. Protective effect and mechanism of Stronger Neo-Minophagen C against fulminant hepatic failure. *World Gastroenterol* 2007,Jan 21;13(3):462-6.
- [25] Yang R, Yuan B-C, Ma Y-S, Zhou S, Liu Y. The anti-inflammatory activity of licorice, a widely used Chinese herb. *Rev PharmBiol* 2017,55(1):5-18.
- [26] Kuba K, Imai Y, Rao S, Jiang C, Penninger J. Lessons from SARS: Control of acute lung failure by the SARS Receptor ACE. *J Mol Med* 2006,84(10):814-20.
- [27] Jia H. Pulmonary Angiotensin-Converting Enzyme2 (ACE2) and inflammatory lung disease. *Review shock*,2016,46(3):23-48
- [28] Bielenberg J. Intoxikationen durch Lakritzenverzehr. *Der Allgemeinarzt.* Verlag Kirchheim 1992. 14:509-515.
- [29] Arase Y, Ikeda K, Murashima N. The long term efficiency of Glycyrrhizin. In: chronic hepatitis C patients *Cancer* 1997;79:1494-1500.
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- [30] Van Rossum T, Vulto A, Hop W et al. Intravenous Glycyrrhizin for the treatment of chronic hepatitis C: A double-blind, randomized, placebo-controlled phase I/II trial. *Journal of Gastroenterology & Hepatology* 1999;14:1093-9.
- [31] Van Rossum T, Vulto A, Hop W et al. Glycyrrhizin induced reduction of Serum-ALT in European patients with chronic hepatitis C. *Am J Gastroenterol* 2001;96(8):2432-7.
- [32] Zhang L, Cui Z, Wang B. Therapeutic effects of Stronger Neo-Minophagen C (SNMC) in patients with chronic liver disease. *Hepatology Research* 2000;16:145-154.
- [33] Lino S, Tango T, Matsushima T et al. Therapeutic effects of stronger neo-minophagen C at different doses on chronic hepatitis and liver cirrhososes. *Histology Research* 2001;19:31-40.
- [34] Tandon A, Tandon BN, Bhujwala RA. Treatment of subacute hepatitis with Lamivudine and intravenous Glycyrrhizin: A pilot study. *Hepatology Research* 2001; 20:1-8.
- [35] Tsubota A, Kumada H, Arase Y et al. Combined ursodeoxycholic acid and glycyrrhizin therapy for chronic hepatitis C Virus infection. *European J of Gastroenterology & Hepatology* 1999,11(10):1077-18.
- [36] Mendes –Silva W, Assafim M, Ruta B, Monteiro R. et al. Antithrombotic effect of Glycyrrhizin, a plant-derived Thrombin Inhibitor. *Thromb Res* 2003.
- [37] Francschetti IM, Monteiro RQ, Guimaraes JA. Identification of glycyrrhizin as a thrombin inhibitor. *Biochem Biophys Res Commun* 1997;235:259 -63.
- [38] Bielenberg J. Influenza A: Oxidativer Stress, Virusreplikation und Krankheitsverlauf. *Journal für die Apotheke* 2018.
- [39] Michaelis M, Geiler J, Naczk P, Sithisarn P, Leutz A, Doerr HW, et al. Glycyrrhizin exerts antioxidative effects in H5N1 influenza A virus-infected cells and inhibits virus replication and pro-inflammatory gene expression. *PLoS One*. 2011;6:e19705.
- [40] Tong T, Hu H, Zhou J, Deng S, Zhang X, Tang W, et al. Glycyrrhizic-Acid-Based Carbon Dots with High Antiviral Activity by Multisite Inhibition Mechanisms. *Small*. 2020:e1906206.
- [41] Liu F, Xu M, Wu J, Luo D, et al. Prognostic value of interleukin -6, C-reactive protein , and procalcitonin in patients with COVID-19. *J.Clin. Virol* 2020;127:104370.
- [42] Chen XX, Zhou HX, Qi WB, et al. Antiviral effects of the combination of Glycyrrhizin and Ribavirin against Influenza A H1N1 Virus infection in Vivo 2015. *50(8):966-72*
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