

Stevia and Uncaria Extract (GlucoMedix®) Reduces Glucose Levels and the Need for Medications in Type 2 Diabetes: An Open Label Case Series of Six Patients

By Thomas P. Dooley,^{1*} Johnny Martín Paredes Pérez,² and Carlos Rengifo Rodriquez³

Complete References

1. Huang PL. A comprehensive definition for metabolic syndrome. *Dis Model Mech*. May-Jun 2009;2(5-6):231-7. doi:10.1242/dmm.001180
2. Moore JX, Chaudhary N, Akinyemiju T. Metabolic Syndrome Prevalence by Race/Ethnicity and Sex in the United States, National Health and Nutrition Examination Survey, 1988-2012. *Prev Chronic Dis*. Mar 16 2017;14:E24. doi:10.5888/pcd14.160287
3. Gelaye B, Revilla L, Lopez T, Sanchez S, Williams MA. Prevalence of metabolic syndrome and its relationship with leisure time physical activity among Peruvian adults. *European journal of clinical investigation*. Oct 2009;39(10):891-8. doi:10.1111/j.1365-2362.2009.02191.x
4. Ferri LA, Alves-Do-Prado W, Yamada SS, Gazola S, Batista MR, Bazotte RB. Investigation of the antihypertensive effect of oral crude stevioside in patients with mild essential hypertension. *Phytotherapy research : PTR*. Sep 2006;20(9):732-6. doi:10.1002/ptr.1944
5. Chan P, Tomlinson B, Chen YJ, Liu JC, Hsieh MH, Cheng JT. A double-blind placebo-controlled study of the effectiveness and tolerability of oral stevioside in human hypertension. *British journal of clinical pharmacology*. Sep 2000;50(3):215-20. doi:10.1046/j.1365-2125.2000.00260.x
6. Ray J, Kumar S, Laor D, et al. Effects of Stevia Rebaudiana on Glucose Homeostasis, Blood Pressure and Inflammation: A Critical Review of Past and Current Research Evidence. *Int J Clin Res Trials*. 2020;5doi:10.15344/2456-8007/2020/142
7. Giri A, Rao HG, V R. Effect of partial replacement of sugar with stevia on the quality of kulfi. *J Food Sci Technol*. Aug 2014;51(8):1612-6. doi:10.1007/s13197-012-0655-6
8. Gupta E, Purwar S, Sundaram S, Rai GK. Nutritional and therapeutic values of Stevia rebaudiana: A review. *Journal of Medicinal Plants Research*. 2013;7(46):3343-3353.



Stevia and Uncaria Extract (GlucoMedix®) Reduces Glucose Levels and the Need for Medications in Type 2 Diabetes: An Open Label Case Series of Six Patients

9. Rizwan F, Rashid HU, Yesmine S, Monjur F, Chatterjee TK. Preliminary analysis of the effect of Stevia (*Stevia rebaudiana*) in patients with chronic kidney disease (stage I to stage III). *Contemp Clin Trials Commun*. Dec 2018;12:17-25. doi:10.1016/j.conctc.2018.08.007
10. Tirapelli CR, Ambrosio SR, de Oliveira AM, Tostes RC. Hypotensive action of naturally occurring diterpenes: a therapeutic promise for the treatment of hypertension. *Fitoterapia*. Oct 2010;81(7):690-702. doi:10.1016/j.fitote.2010.05.018
11. Ritu M, Nandini J. Nutritional composition of *Stevia rebaudiana*, a sweet herb, and its hypoglycaemic and hypolipidaemic effect on patients with non-insulin dependent diabetes mellitus. *J Sci Food Agric*. Sep 2016;96(12):4231-4. doi:10.1002/jsfa.7627
12. Ahmad U, Ahmad RS, Arshad MS, Mushtaq Z, Hussain SM, Hameed A. Antihyperlipidemic efficacy of aqueous extract of *Stevia rebaudiana* Bertoni in albino rats. *Lipids Health Dis*. Jul 27 2018;17(1):175. doi:10.1186/s12944-018-0810-9
13. Kujur RS, Singh V, Ram M, et al. Antidiabetic activity and phytochemical screening of crude extract of *Stevia rebaudiana* in alloxan-induced diabetic rats. *Pharmacognosy Res*. Jul 2010;2(4):258-63. doi:10.4103/0974-8490.69128
14. AbdElwahab AH, Yousuf AF, Ramadan BK, Elimam H. Comparative Effects of *Stevia rebaudiana* and Aspartame on hepato-renal function of diabetic rats: Biochemical and Histological Approaches. *Journal of Applied Pharmaceutical Science* 2017;7(08):34-42.
15. Pallarés Á, Carrasco G, Nava Y, et al. Effectiveness and safety of *Stevia rebaudiana* dried leaves as an adjuvant in the short-term treatment of type 2 diabetes: A randomized, controlled, cross-over and double-blinded trial. *J Med Plant Herbal Ther Res*. 2015;3:16-26.
16. Ruiz-Ruiz JC, Moguel-Ordonez YB, Matus-Basto AJ, Segura-Campos MR. Antidiabetic and antioxidant activity of *Stevia rebaudiana* extracts (Var. Morita) and their incorporation into a potential functional bread. *J Food Sci Technol*. Dec 2015;52(12):7894-903. doi:10.1007/s13197-015-1883-3
17. Sharma R, Yadav R, Manivannan E. Study of effect of *Stevia rebaudiana* bertoni on oxidative stress in type-2 diabetic rat models. *Biomedicine & Aging Pathology*. 2012;2(3):126-131.
18. Ahmad U, Ahmad RS. Anti diabetic property of aqueous extract of *Stevia rebaudiana* Bertoni leaves in Streptozotocin-induced diabetes in albino rats. *BMC Complement Altern Med*. Jun 11 2018;18(1):179. doi:10.1186/s12906-018-2245-2
19. Carrera-Lanestosa A, Acevedo-Fernandez JJ, Segura-Campos MR, Velazquez-Martinez R, Moguel-Ordonez YB. [Antihypertensive, antihyperglycemic, and antioxidant effects of *Stevia rebaudiana* Bertoni (creole variety INIFAP C01) extracts on Wistar rats with induced metabolic syndrome]. *Nutr Hosp*. Aug 27 2020;37(4):730-741. Efecto antihipertensivo, antihiper glucemiante y antioxidante de los extractos de *Stevia rebaudiana* Bertoni (variedad criolla INIFAP C01) en ratas Wistar con síndrome metabólico inducido. doi:10.20960/nh.02858

Stevia and Uncaria Extract (GlucoMedix®) Reduces Glucose Levels and the Need for Medications in Type 2 Diabetes: An Open Label Case Series of Six Patients

20. Carrera-Lanestosa A, Moguel-Ordonez Y, Segura-Campos M. Stevia rebaudiana Bertoni: A Natural Alternative for Treating Diseases Associated with Metabolic Syndrome. *J Med Food*. Oct 2017;20(10):933-943. doi:10.1089/jmf.2016.0171
21. Piscocoya J, Rodriguez Z, Bustamante SA, Okuhama NN, Miller MJ, Sandoval M. Efficacy and safety of freeze-dried cat's claw in osteoarthritis of the knee: mechanisms of action of the species *Uncaria guianensis*. *Inflamm Res*. Sep 2001;50(9):442-8. doi:10.1007/PL00000268
22. Cheng AC, Jian CB, Huang YT, Lai CS, Hsu PC, Pan MH. Induction of apoptosis by *Uncaria tomentosa* through reactive oxygen species production, cytochrome c release, and caspases activation in human leukemia cells. *Food and chemical toxicology : an international journal published for the British Industrial Biological Research Association*. Nov 2007;45(11):2206-18. doi:10.1016/j.fct.2007.05.016
23. Heitzman ME, Neto CC, Winiarz E, Vaisberg AJ, Hammond GB. Ethnobotany, phytochemistry and pharmacology of *Uncaria* (Rubiaceae). *Phytochemistry*. Jan 2005;66(1):5-29. doi:10.1016/j.phytochem.2004.10.022
24. Zhang Q, Zhao JJ, Xu J, Feng F, Qu W. Medicinal uses, phytochemistry and pharmacology of the genus *Uncaria*. *Journal of ethnopharmacology*. Sep 15 2015;173:48-80. doi:10.1016/j.jep.2015.06.011
25. Keplinger K, Laus G, Wurm M, Dierich MP, Teppner H. *Uncaria tomentosa* (Willd.) DC. - Ethnomedicinal use and new pharmacological, toxicological and botanical results. *Journal of ethnopharmacology*. 1998;64(1):23-34. doi:[https://doi.org/10.1016/S0378-8741\(98\)00096-8](https://doi.org/10.1016/S0378-8741(98)00096-8)
26. Goncalves C, Dinis T, Batista MT. Antioxidant properties of proanthocyanidins of *Uncaria tomentosa* bark decoction: a mechanism for anti-inflammatory activity. *Phytochemistry*. Jan 2005;66(1):89-98. doi:10.1016/j.phytochem.2004.10.025
27. Reis SR, Valente LM, Sampaio AL, et al. Immunomodulating and antiviral activities of *Uncaria tomentosa* on human monocytes infected with Dengue Virus-2. *Int Immunopharmacol*. Mar 2008;8(3):468-76. doi:10.1016/j.intimp.2007.11.010
28. Allen-Hall L, Cano P, Arnason JT, Rojas R, Lock O, Lafrenie RM. Treatment of THP-1 cells with *Uncaria tomentosa* extracts differentially regulates the expression of IL-1beta and TNF-alpha. *Journal of ethnopharmacology*. Jan 19 2007;109(2):312-7. doi:10.1016/j.jep.2006.07.039
29. Arauj LCC, Feitosa KB, Murata GM, et al. *Uncaria tomentosa* improves insulin sensitivity and inflammation in experimental NAFLD. *Scientific reports*. Jul 20 2018;8(1):11013. doi:10.1038/s41598-018-29044-y
30. Arauj LCC, Furig IC, Murata GM, et al. The insulin resistance induced by obesity is reversed by *Uncaria tomentosa* through modulation of inflammatory pathway in the liver of mice. presented at: 23rd International Conference on Herbal and Alternative Remedies for Diabetes and Endocrine Disorders; 2017;

Stevia and Uncaria Extract (GlucoMedix®) Reduces Glucose Levels and the Need for Medications in Type 2 Diabetes: An Open Label Case Series of Six Patients

31. Layanne C, Arauj C, Furig IC, et al. The insulin resistance induced by obesity is reversed by *Uncaria tomentosa* through modulation of inflammatory pathway in the liver of mice. . *Journal of Diabetes and Medicine*. 2017;8(10):x.
32. Mendes PF, Ponce F, Fraga DD, Pípole F, Perazzo FF, Hueza IM. High doses of *uncaria tomentosa* (cat's claw) reduce blood glucose levels in rats. . *Int J Pharm Pharm Sci*. 2014;6(2):410-415.
33. Domingues A, Sartori A, Golim MA, et al. Prevention of experimental diabetes by *Uncaria tomentosa* extract: Th2 polarization, regulatory T cell preservation or both? . *Journal of ethnopharmacology*. 2011;137:635-642.
34. Ahmad R, Hashim HM, Noor ZM, et al. Antioxidant and antidiabetic potential of Malaysian *Uncaria*. *Research Journal of Medicinal Plant*. 2011;5(5):587-595.
35. Ranilla LG, Kwon YI, Apostolidis E, Shetty K. Phenolic compounds, antioxidant activity and in vitro inhibitory potential against key enzymes relevant for hyperglycemia and hypertension of commonly used medicinal plants, herbs and spices in Latin America. *Bioresour Technol*. Jun 2010;101(12):4676-89. doi:10.1016/j.biortech.2010.01.093
36. Reinhard KH. *Uncaria tomentosa* (Willd.) D.C.: cat's claw, una de gato, or saventaro. *J Altern Complement Med*. Apr 1999;5(2):143-51. doi:10.1089/acm.1999.5.143
37. Reinhard KH. *Uncaria tomentosa* (WIHD) DC-Cat's Claw, U a de gato oder Katzenkralle. *Zeitschrift fur Phytotherapie*. 1997;18:112-121.
38. Wurm M, Kacani L, Laus G, Keplinger K, Dierich MP. Pentacyclic oxindole alkaloids from *Uncaria tomentosa* induce human endothelial cells to release a lymphocyte-proliferation-regulating factor. *Planta medica*. Dec 1998;64(8):701-4. doi:10.1055/s-2006-957561
39. Peñaloza EMC, Kaiser S, de Resende PE, Pittol V, Carvalho ÂR, Ortega GG. Chemical Composition Variability in the *Uncaria tomentosa* (cat's claw) Wild Population. *Química Nova*. 2015;38(3):378-386. doi:<https://doi.org/10.5935/0100-4042.20150007>
40. Kinghorn AD, Soejarto DD. Discovery of terpenoid and phenolic sweeteners from plants. *Pure and Applied Chemistry*. 2002;74(7):1169-1179.
41. Suzuki H, Kasai T, Sumihara M, Sugisawa H. Influence of oral administration of stevioside on levels of blood glucose and glycogen of intact rats. *Nippon Nogei Kagaku Kaishi*. 1977;51:171-173.
42. Wagner H, Kreutzkamp B, Jurcic K. [The alkaloids of *Uncaria tomentosa* and their phagocytosis-stimulating action]. *Planta medica*. Oct 1985;(5):419-23. Die Alkaloide von *Uncaria tomentosa* und ihre Phagozytose-steigernde Wirkung.
43. Nunez C, Lozada-Requena I, Ysmodes T, Zegarra D, Saldana F, Aguilar J. [Immunomodulation of *Uncaria tomentosa* over dendritic cells, il-12 and profile TH1/TH2/TH17 in breast cancer]. *Rev Peru*

Stevia and Uncaria Extract (GlucoMedix®) Reduces Glucose Levels and the Need for Medications in Type 2 Diabetes: An Open Label Case Series of Six Patients

Med Exp Salud Publica. Oct 2015;32(4):643-51. Nmunomodulacion de Uncaria tomentosa sobre celulas dendriticas, il-12 y perfil TH1/TH2/TH17 en cancer de mama.

44. Anagnostis P, Athyros VG, Tziomalos K, Karagiannis A, Mikhailidis DP. Clinical review: The pathogenetic role of cortisol in the metabolic syndrome: a hypothesis. *The Journal of clinical endocrinology and metabolism*. Aug 2009;94(8):2692-701. doi:10.1210/jc.2009-0370
45. Jeong IK. The role of cortisol in the pathogenesis of the metabolic syndrome. *Diabetes Metab J*. Jun 2012;36(3):207-10. doi:10.4093/dmj.2012.36.3.207
46. Zhang Q, Yang H, Li Y, Liu H, Jia X. Toxicological evaluation of ethanolic extract from Stevia rebaudiana Bertoni leaves: Genotoxicity and subchronic oral toxicity. *Regulatory toxicology and pharmacology : RTP*. Jun 2017;86:253-259. doi:10.1016/j.yrtph.2017.03.021

¹ Research & Development, LivFul Inc., Cheshire, United Kingdom.
Email: tom@tomdooley.org and tdooley@livful.com

² Internal Medicine, Surgery, Hospital Amazónico, Pucallpa, Peru.
Email: jomar.pp40@gmail.com

³ Occupational Health Advisor, CNPC Occupational Health and Safety Department, Lima, Peru.
Email: carlos.rengifo.lote58@gmail.com

*Corresponding author:
ORCID # 0000-0002-3057-4756



TownsendLetter.com/get-involved