

Gymnema sylvestre 25% Gymnemic Acids
INCI: Gymnema sylvestre (leaf) extract

GS4PLUS Gymnema Sylvestre 25%

Gymnema GS4® - Gymnemic acids by Sabinsa

GS4 and GS4 PLUS are the brand name of the extrat of Gymnema by Sabinsa, patented Gymnema sylvestre leaf extract, standardized for 75% (GS4 plus) of gymnemic acid. GS4 PLUS has been the subject of numerous clinical trials with the participation of healthy people and diabetics, who confirmed the safety of its use even in a long-term run. Studies proved that GS4 PLUS® has the ability to lower blood sugar levels. It uses the action of gymnemic acid, which increases the activity of enzymes responsible for the metabolism of sugars, and at the same time limits the expression of enzymes that condition gluconeogenesis. The compound may also increase the release of insulin and improve the regeneration of pancreatic islets. In addition, through the not yet identified mechanism, it temporarily blocks sensing sweet taste, and thus naturally reduces appetite for sweet foods. Less known, but

equally well-documented, are the anti-inflammatory and cardioprotective properties of GS4 PLUS.
In supplementation, GS4 PLUS® is available in the form of tablets and capsules. It is also part of many preparations aimed at optimizing the use of carbohydrates and reducing appetite.
It's not so much the isolated leaf compounds that have manifested hypoglycemic activity, as it has been the entire chemical constituents as a group being able to do this.
A DC grade (Direct Compression) is also available.

25% crude gymnemic acids from Gymnema sylvestre

Gymnema - Helps control appetite and weight, and especially reduces the desire for sugary foods

Gymnema sylvestre is a perennial woody vine, used in Ayurvedic medicine - the Hindi term gurmar, which means "sugar destroyer". Common names include gymnema, gurmar, Australian cowplant, and Periploca of the woods. Its leaves contain triterpenoid saponins, flavonols, and gurmarin. The major biologically active plant molecules are gymnemic acids, a class of triterpenoid saponins, which have the effect of suppressing the taste of sweetness on the tongue. Chewing the leaves suppresses the sensation of sweet. Gynnemic acid compounds in Gymnema sylvestre can also attach to receptors on the intestinal walls, helping to reduce absorption of sugar molecules in the gut. This process can lower blood sugar and promote insulin secretion and release.
Among the types of diabetes (IDDM: concern for the production of insulin by the pancreas or on the contrary insulin resistance / non-insulin dependent NIDDM), Gymnema extracts are reported to be beneficial for types pancreas. Administration to diabetic rabbits regulated blood sugar levels, with significant action on the liver, kidneys, and muscle and metabolic changes usually induced by diabetes. It increases insulin production by eventually regenerating the islets of Langerhans and the beta cells of the pancreas inside.

STUDIES & DOCUMENTS(7)

Antidiabetic effect of GS extract in non-insulin-dependant

[Internal Study]
Hyperglycaemia, hyperlipaemia and excessive glycosylation of proteins, including haemoglobin, which are the direct consequences of insulin insufficiency in Type 2 diabetes, appear to be corrected by GS4 therapy, by augmenting insulin levels in

circulation. Longer periods of GS4 therapy and better follow up of patients are needed.

The effectiveness of GS4 an extract from the leaves of Gymnema sylvestre, in controlling hyperglycaemia was investigated in 22 Type 2 diabetic patients on conventional oral anti-hyperglycaemic agents. GS4 (400 mglday) was administered for 18-20 months as a supplement to the conventional oral drugs. During GS4 supplementation, the patients showed a significant reduction in blood glucose, glycosylated haemoglobin and glycosylated plasma proteins, and conventional drug dosage could be decreased. Five of the 22 diabetic patients were able to discontinue their conventional drug and maintain their blood glucose homeostasis with GS4 alone. These data suggest that the beta cells may be regenerated repaired in Type 2 diabetic patients on G4S, supplementation. This is supported by the appearance of raised insulin levels in the serum of patients after GS4, supplementation.

Discussion (partial) : The above results confirm that GS4 supplementation to Type 2 diabetic patients appears to have an advantage over conventional drug therapy alone, in reducing hyperlipaemia and may possibly delay the lipid-mediated secondary complications of atherosclerosis. Pirart (1977) and Tchobroutsky (1978) have reported that there is indirect evidence for the possible association between the duration and the severity of hyperglycaemia and the risk of developing such complications. Hyperglycaemia, hyperlipaemia and excessive glycosylation of proteins, including haemoglobin, which are the direct consequences of insulin insufficiency in Type 2 diabetes, appear to be corrected by GS4 therapy, by augmenting insulin levels in circulation. Longer periods of GS4 therapy and better follow up of patients are needed.

Antidiabetic Effect Of A Leaf Extract From G Ymnema Sylvestre In Non-Insulin-Dependent Diabetes Mellitus Patients - Journal of Ethnophannncoloqq, 30 (1990) 295-305, K. Baskaran, B. Kizar Ahamath, K. Radha Shanmugasundaram And E.R.B. Shanmugasundaram

Antiobesity effect of extract of gymnema

[Global Study]

A significant (p 0.001) reduce in increased body weight, temperature due to obesity was observed after 45th day of treatment as compared to the normal and standard group. The extract also improved the cholesterol, triglyceride, LDL and HDL level.

Abstract : The hexane extract of leaves of Gymnema sylvestre was evaluated for its anti-obesity activity in the simplified high fed cafeteria diet induced obesity in Sprague dawley rats. Group-I (normal control) were fed on only basal diet without any treatment, Group-II (obesity control) were induced obesity and only on basal diet without any treatment, Group-III and Group IV were induced obesity and treated with hexane fraction of Gymnema sylvestre (150 mg/kg and 250 mg/kg body weight) respectively. Group V were induced obesity and treated with Atorvastatin as a standard drug. A significant (P>0.001) reduce in increased body weight, temperature due to obesity was observed after 45th day of treatment as compared to the normal and standard group. The extract also improved the cholesterol, triglyceride, LDL and HDL level. Blood samples were collected from retro-orbital plexus. Observed data was found statistically significant in reduction of extract-treated obesity rats.

The effect of the extract was comparable to that of standard drug Atorvastatin (50mg/kg body weight).

Keywords: Hexane extract, cholesterol, triglyceride, obesity, Gymnema sylvestre, atorvastatin

Antiobesity effect of hexane extract of gymnema in high cafeteria diet induced obesity rats. Study published in international research journal of Pharmacie, available on www.irjonline.com, Kaushik Manish, Kaushik Aditi, Arya Renu, Singh Gajraj and Malik Poonam

Gymnema Sylvestre Extract In The Control of Blood Glucose In Insulin-Dependent Diabetes

[Global Study]

GS therapy appears to enhance endogenous insulin, possibly by regeneration / revitalisation of the residual beta cells in insulin-dependent diabetes mellitus

GS, a water-soluble extract of the leaves of Gymnema sylvestre, was administered (400 mglday) to 27 patients with insulin-

dependent diabetes mellitus (IDDM) on insulin therapy. Insulin requirements came down together with fasting blood glucose and glycosylated haemoglobin (HbAlc) and glycosylated plasma protein levels. While serum lipids returned to near normal levels with GS, therapy, glycosylated haemoglobin and glycosylated plasma protein levels remained higher than controls. IDDM patients on insulin therapy only showed no significant reduction in serum lipids, HbAlc or glycosylated plasma proteins when followed up after 10-12 months. GS therapy appears to enhance endogenous insulin, possibly by regeneration / revitalisation of the residual beta cells in insulin-dependent diabetes mellitus.
Use of Gymnema Sylvestre Leaf Extract In The Control of Blood Glucose In Insulin-Dependent Diabetes Mellitus - Jounal of Ethnopharnzacology, 30 (1990) 281- 294, E.R.B. Shanmugasundaram, G. Rajeswaria, K. Baskarana, B.R. Rajesh Kumar, K. Radha Shanmugasundaram and B. Kizar Ahhlathb

Antiobesity and cardioprotective effect of Gymnema sylvestre extract

[From Litterature]
Furthermore, treatment with standardized ethanolic GSE (200 m/kg/p.o.) for a period of 28 days resulted in significant reversal of above mentioned changes in the obese Wistar rats.
Objective: Obesity plays a central role in the insulin resistance syndrome, which is associated with hyperinsulinemia, hypertension, hyperlipidemia, type 2 diabetes mellitus, and an increased risk of atherosclerotic cardiovascular disease. The present study was done to assess the effect of Gymnema sylvestre extract (GSE) in the high fat diet (HFD)-induced cellular obesity and cardiac damage in Wistar rats.
Materials and Methods: Adult male Wistar rats (150–200 g body weight) were used in this study. HFD was used to induce obesity. Body mass index, hemodynamic parameters, serum leptin, insulin, glucose, lipids, apolipoprotein levels, myocardial apoptosis, and antioxidant enzymes were assessed. Organ and visceral fat pad weights and histopathological studies were also carried out.
Results: Oral feeding of HFD (20 g/day) for a period of 28 days resulted in a significant increase in body mass index, organ

weights, visceral fat pad weight, cardiac caspase-3, cardiac DNA laddering (indicating apoptotic inter-nucleosomal DNA fragment), and lipid peroxide levels of cardiac tissues of rats. Further, mean arterial blood pressure, heart rate, serum leptin, insulin, LDH, LDL-C, total cholesterol, triglycerides, and apolipoprotein-B levels were enhanced significantly, whereas serum HDL-C, apoliporotein-A1 levels, and cardiac Na+ K+ ATPase, antioxidant enzymes levels were significantly decreased. Furthermore, treatment with standardized ethanolic GSE (200 m/kg/p.o.) for a period of 28 days resulted in significant reversal of above mentioned changes in the obese Wistar rats.
Conclusion: The present study has demonstrated the significant antiobesity potential of GSE in murine model of obesity.
Evaluation of antiobesity and cardioprotective effect of Gymnema sylvestre extract in murine model. Available on ijponline.com, Vinay Kumar, Uma Bhandari, Chakra Dhar Tripathi, Geetika Khanna, Indian Journal of Pharmacology, October 2012, Vol 44, Issue 5 607

Gymnema sylvestre on high fat diet induced obese diabetic rats

[From Litterature]
The results of the present study confirm that water soluble fraction of G. sylvestre ethanol extract effectively alleviates the deleterious effects produced by HFD in diabetic rats. Further, G. sylvestre ethanol extract offers cardiac protection. The present study supports the potential of G. sylvestre in diaobesity disorder.
Abstract : Obesity is associated with numerous co-morbidities such as cardiovascular diseases, type 2 diabetes, hypertension and others. Therefore, the present study was planned to investigate the effect of water- soluble fraction of Gymnema sylvestre ethanol extract on biochemical and molecular alterations in obese diabetic rats. Diabetes was induced by single i.v. injection of streptozotocin (45 mg/kg) via tail vein. Obesity was induced by oral feeding of high fat diet for a period of 28 days in diabetic rats. Body weight gain, food intake, water intake, hemodynamic parameters (systolic, diastolic, mean arterial blood pressures and heart rate), serum biochemical parameters (leptin, insulin, lipid levels, apolipoprotein B and glucose), cardiomyocyte apoptosis (cardiac caspase-3, Na+/

K+ ATPase activity and DNA fragmentation) organs and visceral fat pad weight and oxidative stress parameters were measured. Oral treatment with water soluble fraction of Gymnema sylvestre ethanol extracts (120 mg/kg/p.o.) for a period of 21 days, resulted in significant reduction in heart rate, mean arterial pressure, serum leptin, insulin, apolipoprotein B, lipids, glucose, cardiac caspase-3 levels, Na+/K+ ATPase activity and DNA laddering, visceral fat pad and organ's weight and improved the antioxidant enzymes levels in the high fat diet induced obesity in diabetic rats. The results of present study reveal that water soluble fraction of Gymnema sylvestre ethanol extract could be useful intervention in the treatment of obesity and type-2 diabetes mellitus.
Key words: Gymnema sylvestre, leptin, insulin, blood pressure, caspase-3, dyslipidemia
In conclusion : The results of the present study confirm that water soluble fraction of G. sylvestre ethanol extract effectively alleviates the deleterious effects produced by HFD in diabetic rats. The possible mechanism of water soluble fraction of Gymnema sylvestre ethanol extract for antiobesity activity is due to the reduction of serum leptin, insulin, hyperlidemia and oxidative stress in HFD fed diabetic rats. Further, G. sylvestre ethanol extract offers cardiac protection by decreasing cardiac caspase-3 levels, Na+/K+ ATPase activity, DNA laddering, oxidative stress, and maintaining normal architecture of myocardium. The present study supports the potential of G. sylvestre in diaobesity disorder.
Protective effect of Gymnema sylvestre ethanol extract on high fat diet induced obese diabetic wistar rats. V. Kumar, Uma Bhandari, C. D. Tripathi and Geetika Khanna, Indian Journal of Pharmaceutical Sciences, July - August 2014

Gymnema sylvestre in obesity and diabetes management

[From Litterature]
Several components extracted from Gymnema prevent the accumulation of triglycerides in muscle and liver, and also decrease fatty acid accumulation in the circulation
The prevalence of obesity is associated with many health-related problems. Currently, more than 300 million people are considered to be obese. According to the World Health Organization (WHO), by

2030, 87 and 439 million peoplewill be affected in India and the world, respectively. Today, herbal medicines are gaining interest in the treatment of obesity and diabetes, becauseof their minimal side effects.Gymnemicacid – an active component isolated from Gymnema sylvestre – has anti-obesity and antidiabetic properties, decreases body weight and also inhibits glucose absorption. Several components extracted from Gymnema prevent the accumulation of triglycerides in muscle and liver, and also decrease fatty acid accumulation in the circulation. In this paper, an attempt has been made to review the effects of various extracts from Gymnema sylvestre in the regulation of carbohydrate and lipid metabolism in both animal and clinical studies.
A systematic review of Gymnema sylvestre in obesity and diabetes management, Ramesh Pothuraju, Raj Kumar Sharma, Jayasimha Chagalamarri, Surender, Jangra and Praveen Kumar Kavadi, J Sci Food Agric 2014; 94: 834–840

Phytochemical and Pharmacological Properties of Gymnema

[From Litterature]
This review explores the transition of a traditional therapeutic to a modern contemporary medication with an overview of phytochemistry and pharmacological activities of the herb and its phyto constituents.
Gymnema sylvestre (Asclepiadaceae), popularly known as “gurmar” for its distinct property as sugar destroyer, is a reputed herb in the Ayurvedic system of medicine. The phyto constituents responsible for sweet suppression activity includes triterpene saponins known as gymnemic acids, gymnemasaponins, and a polypeptide, gurmarin. The herb exhibits a broad range of therapeutic effects as an effective natural remedy for diabetes, besides being used for arthritis, diuretic, anemia, osteoporosis, hypercholesterolemia, cardiopathy, asthma, constipation, microbial infections, indigestion, and anti-inflammatory. G. sylvestre has good prospects in the treatment of diabetes as it shows positive effects on blood sugar homeostasis, controls sugar cravings, and promotes regeneration of pancreas. The herbal extract is used in dietary supplements since it reduces body weight, blood

cholesterol, and triglyceride levels and holds great prospects in dietary as well as pharmacological applications.
Phytochemical and Pharmacological Properties of Gymnema sylvestre: An Important Medicinal Plant. Pragya Tiwari, B. N. Mishra, and Neelam S. Sangwan.

https://www.becarre-natural.com/product/424/GS4PLUS-Gymnema-Sylvestre-25