White Kidney Bean Extract

WKB20K®

White Kidney Bean Extract

White Kidney Bean extract is used as a natural, non-stimulant ingredient in nutritional and weight loss supplements, which are referred to as starch blockers. The extract consists of compounds, phaseolin and phaseolamin, which may aid weight loss by inhibiting the body's production of alpha-amylase, an enzyme involved in the digestion of carbohydrates.

Latin Name	Phaseolus vulgaris linn.
Synonyms	White Kidney Bean
Plant Part Used	Seed
Active constituent	Phaseolin, Phaseolamin, 20K α-amylase inhibitory acitvity
Appearance	Off-white powder to white
Application	Weight management, food additive, dietary supplement

Actives of Extract we offer:

- PHASEOLIN 2%, 4% & 10%
- WKB20K (Amylase Inhibitory Activity 20000 u/gm)
- WKB10K (Amylase Inhibitory Activity 10000 u/gm)
- WKB8K (Amylase Inhibitory Activity 8000 u/gm)

Chemical composition

White kidney beans contain 19.9% ~ 20.0% proteins, 1.6% ~ 2.1% fats, 37.6% ~ 48.5% carbohydrates and are rich in vitamins; Vitamin C, Vitamin B1 and Vitamin B2.

Seeds contain glycoproteins, a trypsin inhibitor, in addition to hemagglutinin. The cotyledons and axon parts of the seeds also contain stigmasterol, sitosterol and a small amount of compesterol, phytohemagglutinin (PHA), leucopelargonidin, leucocyanidin, leucodelphinidin, kaempferol, quercetin, 3 - Glucoside, kaempferol xyloglucoside, hoopostein, cyanidin, delphinidin and the like 3,5-di-glucoside.

Reason for going with WKB20K®

1. WKB20K® is positive in Phaseolin Testing

Phaseolin Description

- **Phaseolin** is the main reserve globulin in seeds of the (*Phaseolus vulgaris* L.). Phaseolin is able to inhibit the activity of the enzyme α-amylase, which is responsible for the cleavage of carbohydrates. Phaseolin-containing plant extract are used because of this nutritional property in food supplements and medicinal products.
- **Molecualr Formula:** $C_{20}H_{18}O_4$
- **Molecualr Weight:** 322.26 g/mol
- Phaseolin subunits have a molecular weight ranging from 43.1 to 51.5 kDa and can be divided into three types: Tendergreen (T-) phaseolin with three visible subunits and Sanilac (S-) and Inca (I-) phaseolins with two visible subunits. The largest subunit (52 kDa) is present in S- and T-phaseolins but absent in I-phaseolin. We observed 36S-phaseolin patterns showing two major bands in the molecular-weight range of 43-52 kDa.

2. WKB20K® is free from phytohaemagglutinin

3. WKB20K® is a well researched & clinically studied ingredient with proven health management benifit.

4. WKB20K® has α-amylase inhibitory activity which lowers the levels of post prondial hyperglycemia via control of starch breakdown.

Benefits of WKB20K®

- WKB20K® extract supplements help to block the digestion of long-chain carbohydrates, which may have positive effects for weight loss and general health.
- WKB20K® can effectively inhibit starch decomposition by inhibiting formation of enzyme alpha-amylase, which is good for losing weight
- WKB20K® can protect the functioning of spleen and kidney
- WKB20K® promotes the ordered split of WBC in mammals
- WKB20K® can be used in management of obesity and diabetes
- WKB20K® good for intestinal peristalsis
- WKB20K® has been investigated for its benefits for obesity, pre-diabetes and type-2 diabetes mellitus, hypercholesterolemia (high cholesterol), urinary tract infection (UTIs), kidney stones and lung cancer.

Ref-1: A Dietary Supplement Containing Standardized Phaseolus vulgaris extract influences body composition of overweight men and women; int. J. Med. Sci. 2007, 4

Ref-2: The potential of the Phaseolus vulgaris extract a - amylase inhibitor isoform 1 (a -AI1) starch blockers as a widely used remedy against obesity and diabetes. Consumption of the a-amylase inhibitor causes marginal intraluminal a - amylase activity facilitated by the inhibitor's appropriate structural, physico-chemical and functional properties. British Journal of Nutrition (2008), 100 , 1-12

How WKB20K® Works

DIGESTION & ABSORPTION OF CARBOHYDRATES:

(1) Before carbohydrates can be absorbed they must be digested and broken down into thier simplest form, a monosaccharide.

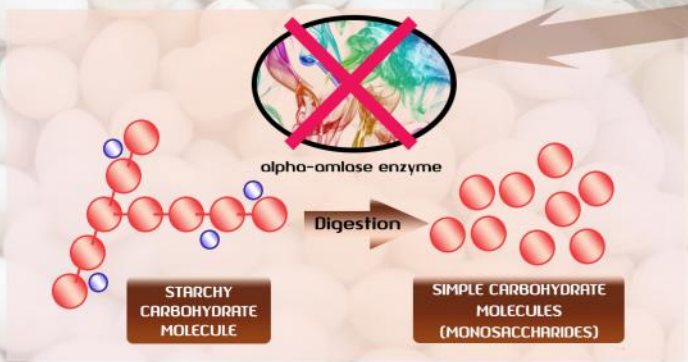
(2) The digestion of carbohydrates begin in the mouth with enzymes secreted by the salivary glands. This actoin only accounts for about 5% of carbohydrate digestion.

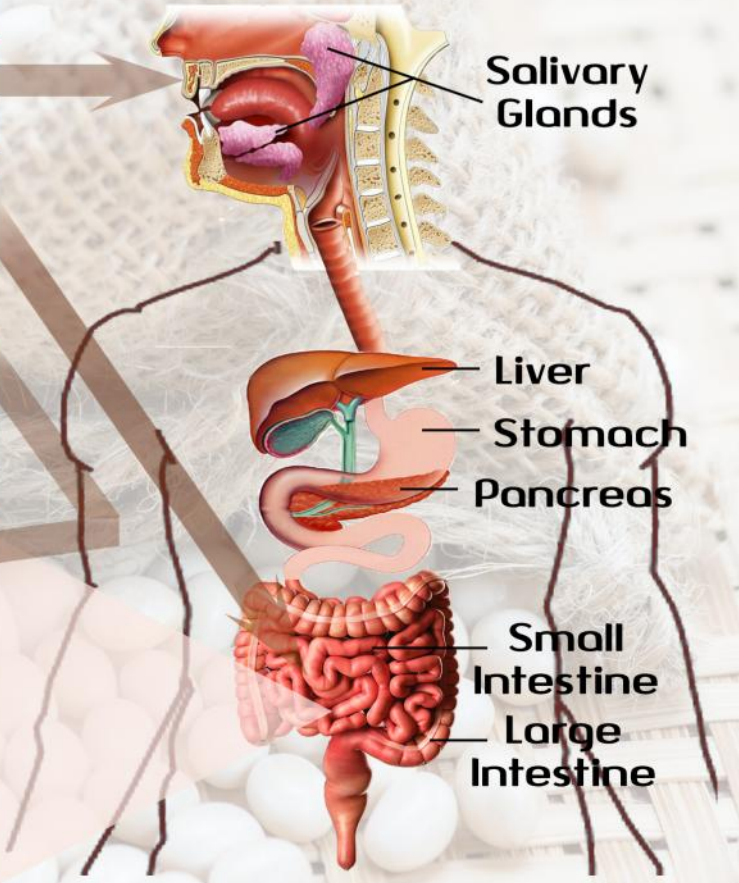
(3) The primary site of carbohydrates digestion is the small intestine and this is where the primary carbohydrate digesting enzyme, alpha-amylase, is secreted.

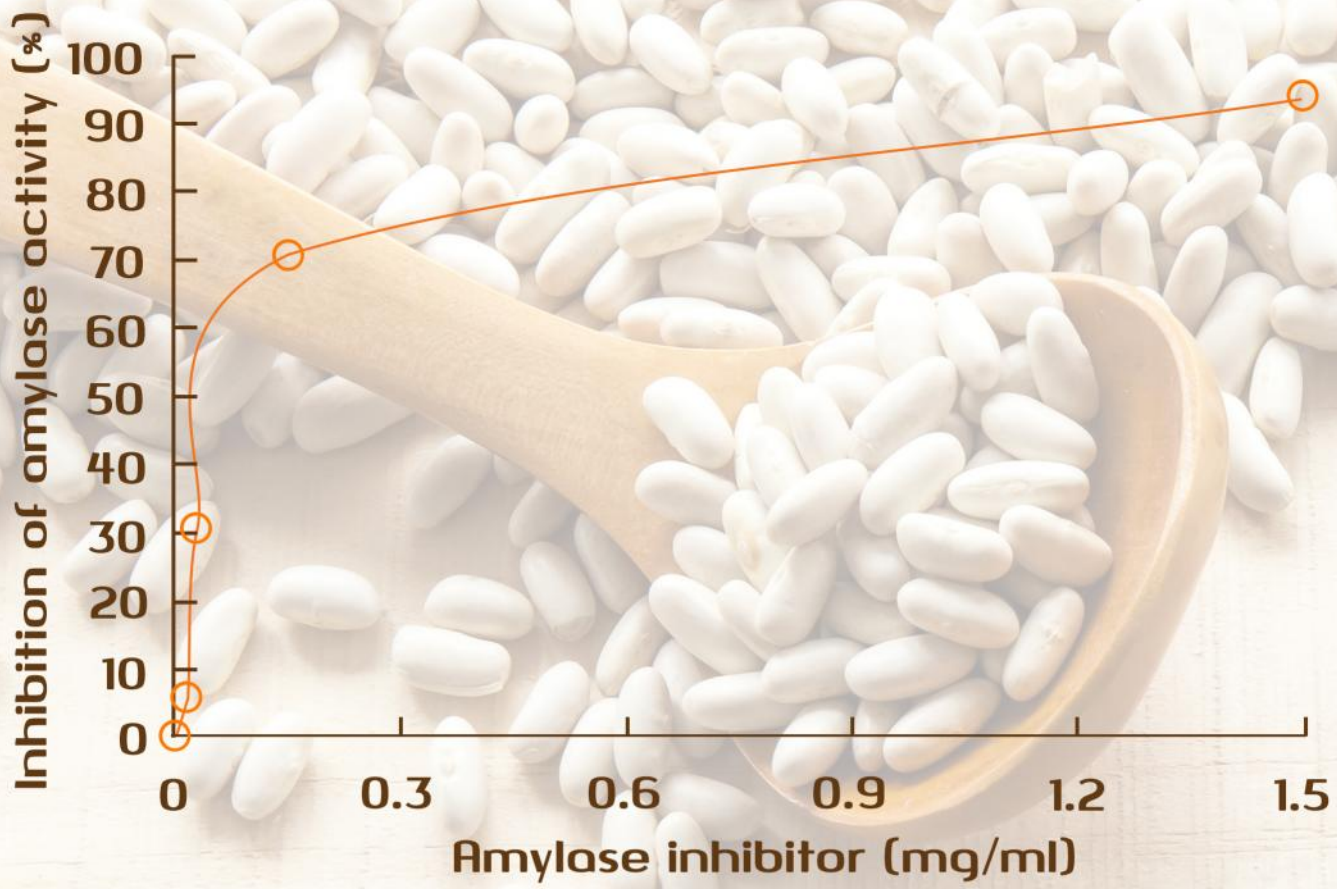
HOW WHITE KIDNEY BEAN WORKS;

(4) White kidney bean extract neuturalizes the alpha-amylase enzyme, and thus blocks the digestion of carbohydrates.

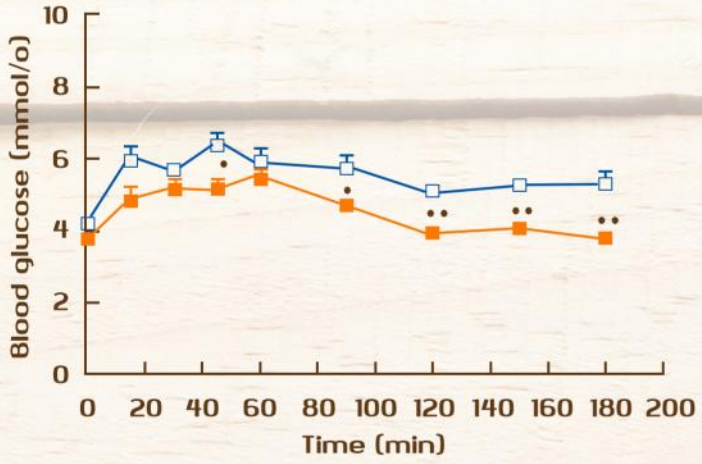
(5) Carbohydrates that are not digested in the samll intestine pass through the body and are not absorbed.



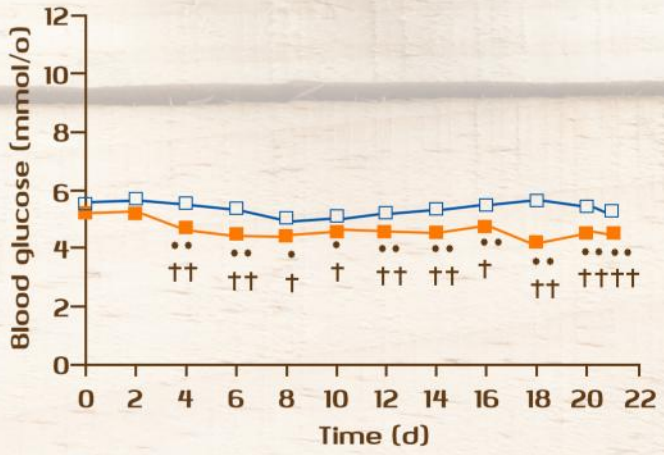




Blood Glucose Levels In Wistar Rats With & Without Administration of White Kidney Bean Extract



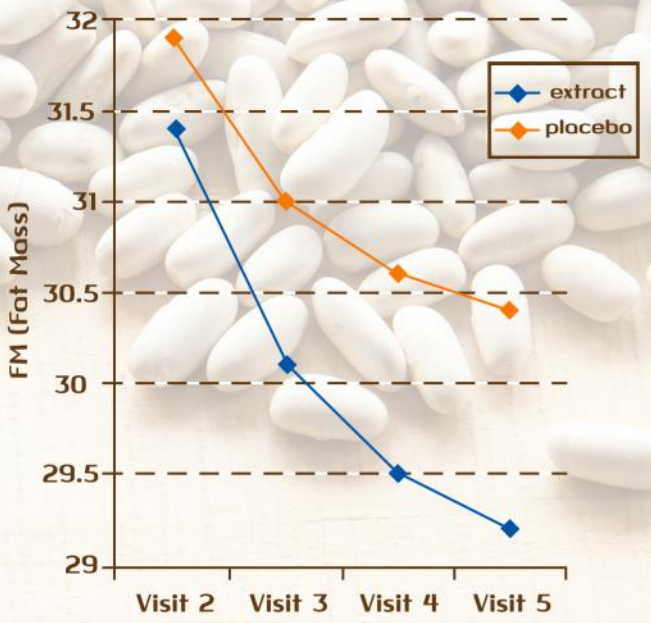
Blood glucose values (mmol/l) obtained after the oral adminstration to 2.5-month-old Wistar rats of starch (2 g/Kg body weight) suspended at 50% in NaCl (9 g/l) alone (NaCl:□) or with 50mg amylase inhibitor/kg body weight (■). The values are means of six determinations for each experimental group, with standard errors of the mean represented by vertical bars. Mean values was significantly different from that for NaCl at the same time: P, 0-05,** P, 0-01.*

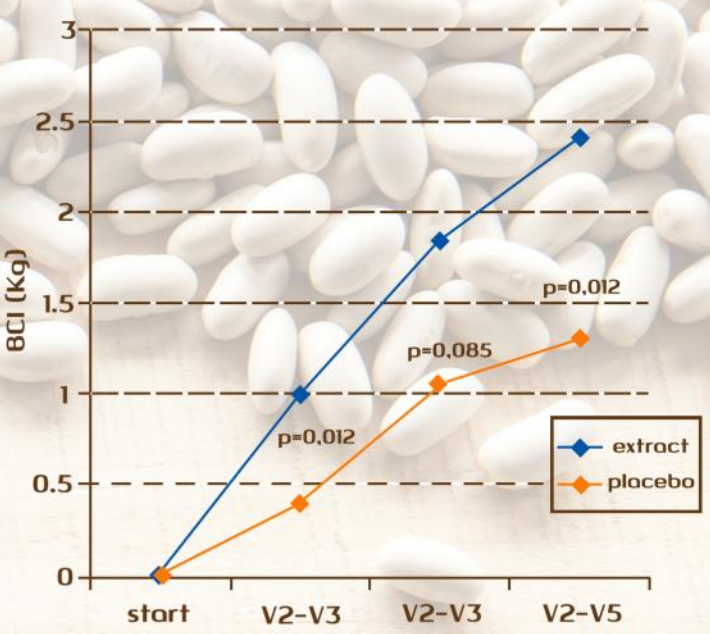


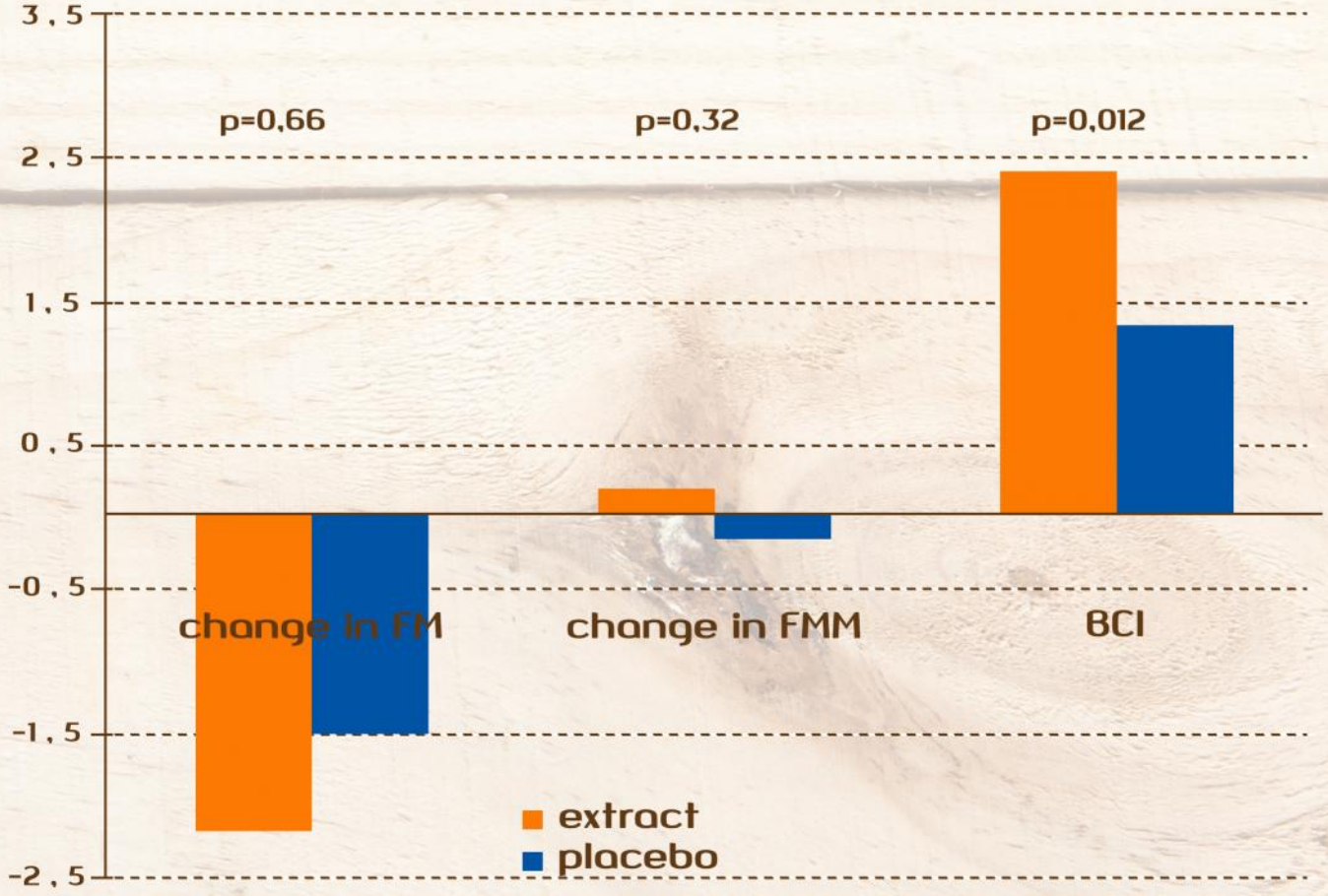
*Evolution of the blood glucose values (mmol/l) of Wistar rats over the 21 d following the oral administration of NaCl (9 g/l) alone (NaCl;□) or containing 50 mg a-amylase inhibitor/kg body weight (■). The values are means of six determinations for each experimental group, with standard errors of the mean represented by verticalbars. Mean value was significantly different from that for NaCl on the same day: * P,0·05, ** P,0·01. Mean value was significantly different from that for inhibitor on day 0: †P,0·05, ††P,0·01.*

Source: M. A. Tormo et al. Hypoglycaemic and anorexigenic activities of an a-amylase inhibitor from white kidney beans (Phaseolus vulgaris) in Wistar rats. British Journal of Nutrition (2004), 92, 785-790. https://doi.org/10.1079/BJN20041260

Changes in Fat Mass (FM), Fat-Free Mass (FFM) and Body Composition Improvement index (BCI) during a Clinical Trial

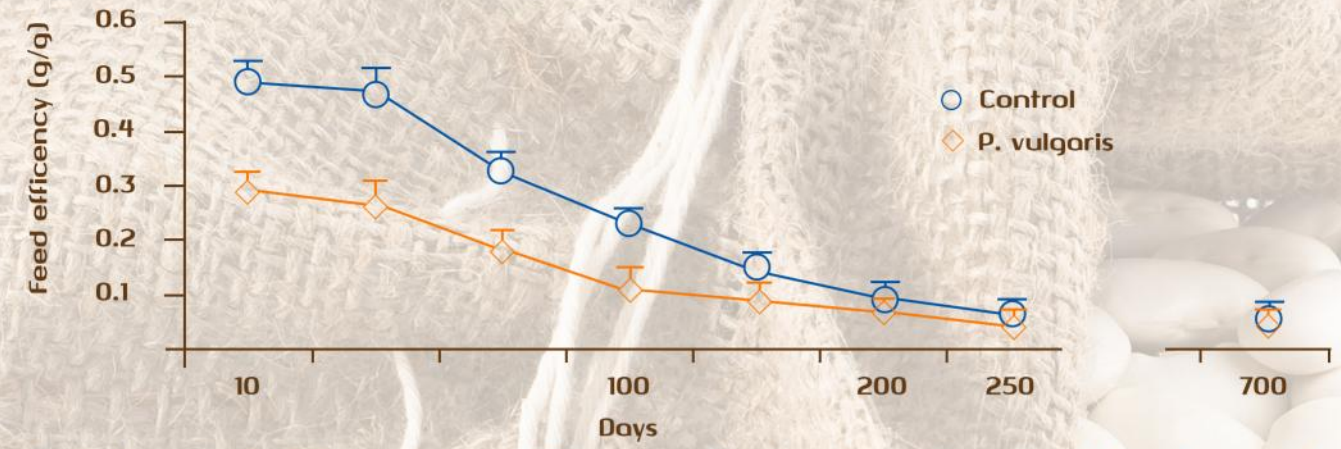




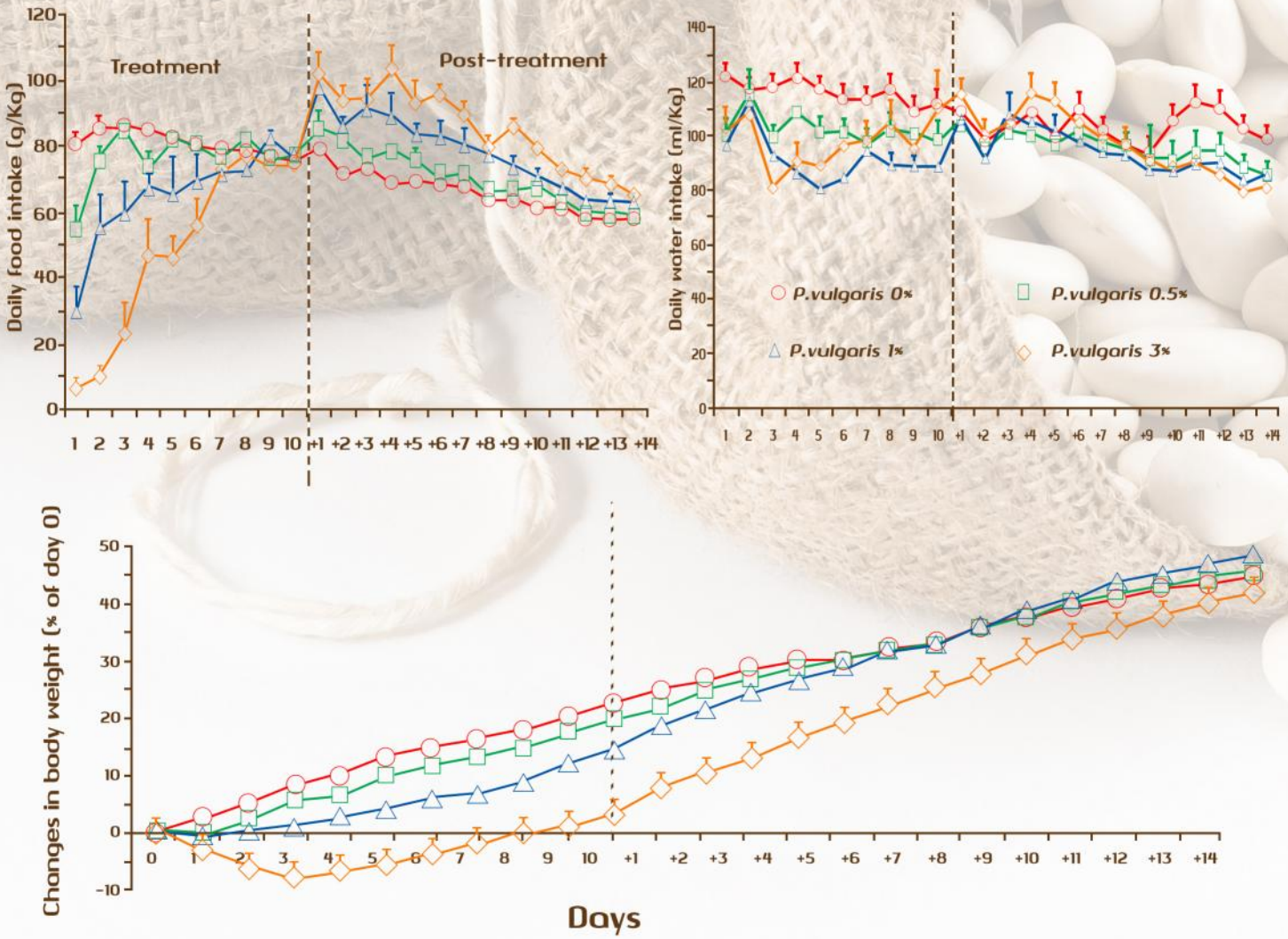


Source: T. Opala, P. Rzymski, I. Pischel, M. Wilczak, J. Wo´zniak.Efficacy of 12 weeks supplementation of a botanical extract based Weight loss formula on body weight, body composition And blood chemistry in healthy, overweight subjects - A randomised double-blind placebo-controlled clinical trial. Eur J Med Res (2006) 11: 343-350

Potential efficacy of preparations derived from *phaseolus vulgaris* in the control of appetite, energy intake, and carbohydrate metabolism

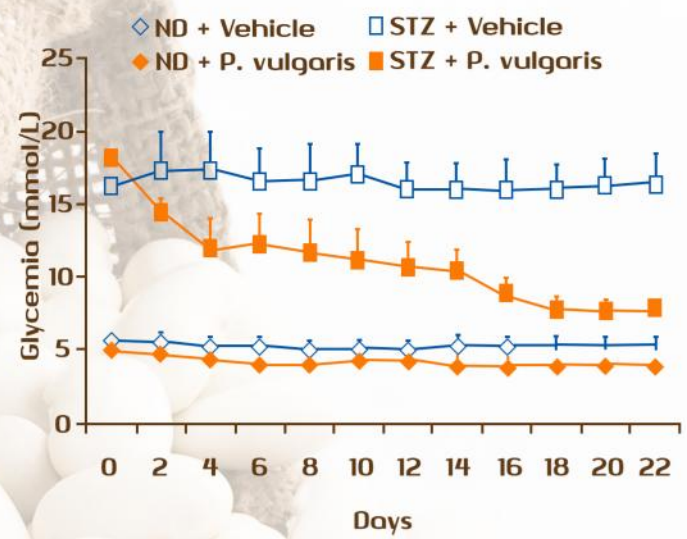


Reducing effect of the prolonged (700 consecutive days) ingestion of a Phaseolus vulgaris preparation, mixed in a starch-enriched diet, on feed efficiency [defined as the body weight gain (g) over the amount (g) of food intake] in Hooded Lister rats.

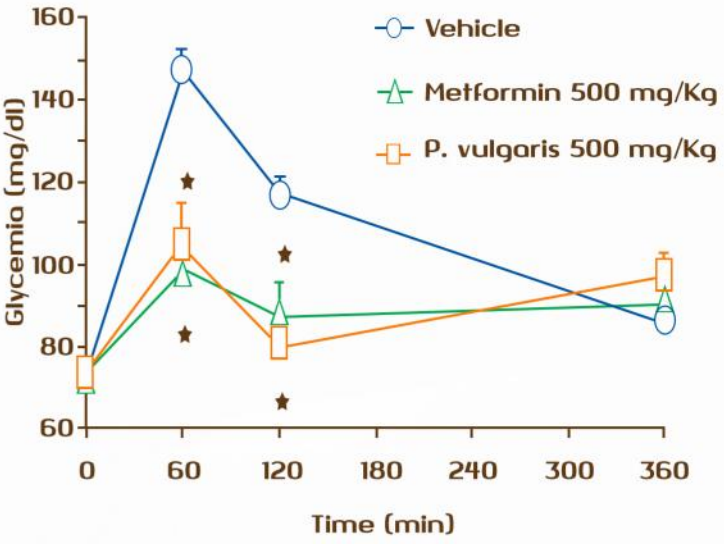


Reducing effect of the repeated (10 consecutive days) ingestion of a Phaseolus vulgaris extract, mixed - at the concentrations of 0%, 0.5%, 1% and 3% - to a starch enriched diet, on daily food (top panel) and water (center panel) intake, as well as changes in body weight (expressed as percent of baseline) (bottom panel) in Wistar rats. Each point is the mean ± SEM of n=6 to 7 rats. Hatched vertical lines indicate the end of the 10 - day treatment phase and the start of the 14-day post-treatment phase.

Effect of Phaseolus vulgaris on Glycemia



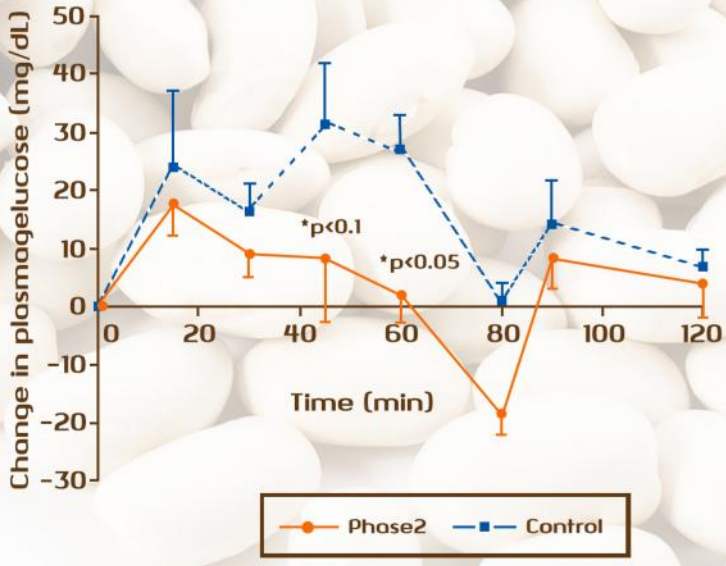
Reducing effect of the repeated (22 Consecutive days) administration of a Phaseolus vulgaris extract on glycemia in control (ND) and streptozotocin-treated (STZ) rats



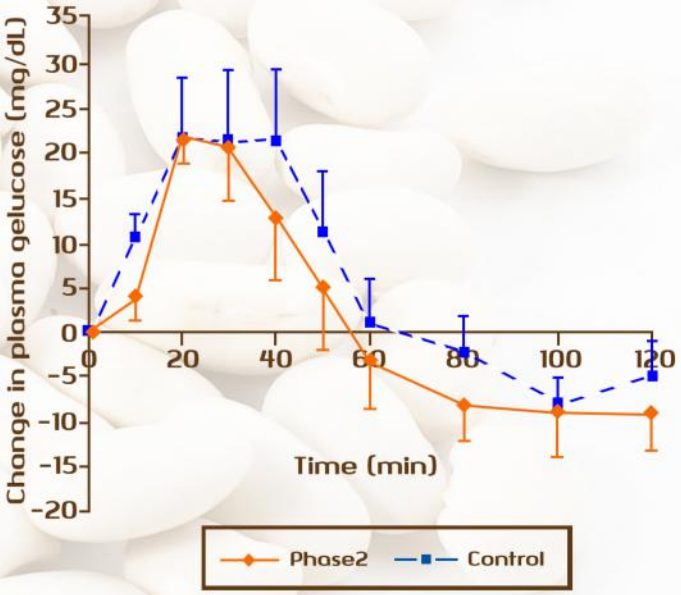
Reducing effect of a Phaseolus vulgaris extract and metformin on time-course of glycemia in Wistar rats

Source: Mauro AM Carai, Noemi Fantini, Barbara Loi, Giancarlo Colombo, Antonella Riva, Paolo Morazzoni. Potential efficacy of preparations derived from Phaseolus vulgaris in the control of appetite, energy intake, and carbohydrate metabolism. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy 2009:2 145-153

Effect of Phaseolus vulgaris on Human Glucose Absorption after Starch Consumption



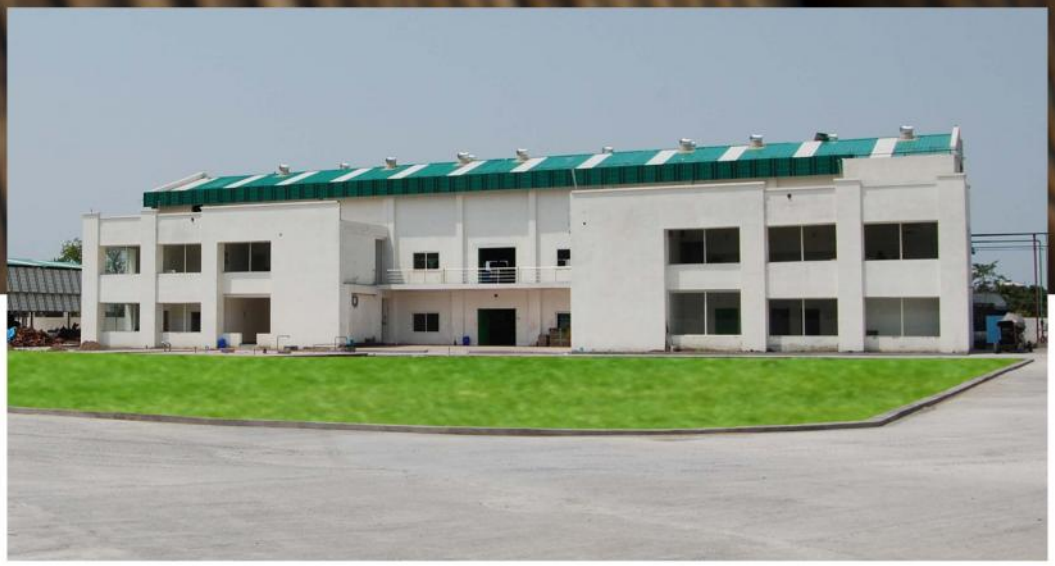
Comparison of 1.5 g of Phase 2 vs. control on changes in plasma glucose after consumption of 4 slices of white bread and margarine (mean ± standard error of mean)



Comparison of 0.75 g of Phase 2 vs. control on changes in plasma glucose after consumption of a full meal (mean ± standard error of mean)

Source: Joe A.Vinson, Hassan Al Kharrat and Donna Shuta. Investigation of an Amylase Inhibitor on Human Glucose Absorption after Starch Consumption. The Open Nutraceuticals Journal, 2009, 2, 88-91

Sunpure Extracts Pvt Ltd has evolved a frontrunner in botanical extracts and nutraceutical ingredients in India & global platform with a cutting-edge cGMP Manufacturing Plant spread in pristine pollution-free environment, **Sunpure Research Incubation Centre (SRIC)** has team of dedicated scientists and full spectrum testing facilities. **SRIC** supports company in achieving new bioactives / derivatives along with filing DMFs, Dossiers, patents and working in compliance and tandem with Global Regulatory Bodies.



CERTIFICATIONS

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