MEDICATION thru' NUTRITION

Polypeptide-k™ (PPk™)

A Single Molecule Extract with 18 Amino Acids

Medication thru' Nutrition

In view of the fact that prevalence of diabetes and obesity diseases are escalating, we feel the need to incorporate our natural plant protein, PPk™ into food products to help curb these diseases. Approximately 57 % of amino acids present in PPk™ function in regulating the blood sugar levels as well as maintaining glucose levels in the body.

We have discovered a bioactive ingredient plant protein, Polypeptide-k™(PPk™), which has shown positive results in preventing and treating diabetes. PPk™ also has the potential to treat other related diseases such as obesity as well as curb metabolism issues which both are global health issues that we need to address.

- PPk™ is a **single** molecule extracted from bitter gourd seeds *(Momordica charantia)*, which consists of 18 amino acids.
- PPk™ acts as plant insulin and does not cause hypoglycemia in diabetic patients.
- Both the PPk™ and its extraction process have been patented over 90 countries including USA, Europe and Japan.

How Does It Work?

- Activates inactive insulin
  - Since PPk™ is a small single molecule peptide, it attaches itself to inactive insulin to re-activate the insulin.
- Rejuvenates Pancreas
  - Since PPk™ lessens the workload of pancreas, thus pancreas will be rejuvenated over a period of time.

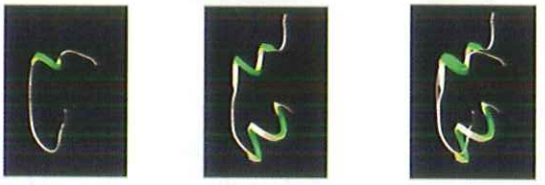
PPk™: A Better Choice

- It improves heart and lipid profile
  - PPk™ reduces level of triglycerides and cholesterol level when taken orally. This is noted in the US Patent 6831162.
- It showed no cross reaction with insulin or other medication.
- It has no known toxicity of overdose.
- It has no known side effects with other prescribed drugs.
- It benefits overall health.
- No hypoglycemia.

PPk™: Functions

- Regulate and maintain healthy blood glucose level naturally.
- Enhance[1] metabolism.
- Helps to protect and rejuvenate pancreas.

3D Protein Structure Comparison



PPk™ | Human Insulin | Merged Structure

**PPk™ is 34% homology to human insulin.*
Thomas et al.; Structure, Function & Genetics 34:184-196 (1996), reported that: 28% homology exhibit similar properties to original hormone.

18 Amino Acids of PPk™

Amino Acid	Amino Acid Content (%)
Glutamine[1]	17.1
Aspartic Acid	9.4
Arginine	9.2
Glycine	8.9
Leucine	8.2
Alanine	7.3
Valine	6.8
Proline & Cysteine	5.5
Serine	5.3
Isoleucine	4.8
Phenylainine	4.2
Histidine	3.1
Lycine & Trytophan	3.0
Threonine	3.0
Tyrosine	2.7
Methionine	1.5

[1] – Opera et al demonstrated that dietary Gln supplementation during high fat feeding prevented the development of overweight hyperglycemia.

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MEDICATION thru' NUTRITION

Livvon™

Let Food Be Thy Medicine & Medicine Be Thy Food

By Hippocrates – Father of Modern Science

The adverse effects from the drugs, has encouraged patients to opt for safer alternative; traditional medicine from natural products. Nutrients in food can play an important role as medication, offers a remarkable alternative for metabolic diseases; diabetes & obesity. Many people with diabetes need to follow special dietary plans to control the level of sugar in their blood. Through innovations, we have successfully expanded the application of PPk™ into functional food.

Hiestand
SWISS GOURMET BAKERY

Aryzta Food Solutions an international Swiss company realized the potential of PPk™ and has introduced the PPk™ ingredient into bread products called PPk™ Soft Roll² as a functional food for the normal and pre-diabetes and diabetes market.

Cambert (M) Sdn Bhd, a sister company of F.E. Zuellig, came up with a new and trendy product called Sugard for the diabetes and pre-diabetes using sachets. It befits the trendy nature of medication where you pop in a sachet before your meal, so that the body is ready to receive food.

The Prime Sugard

CAMBERT

EVERPROSPER FOOD INDUSTRIES SDN. BHD.

Organic
REHABILITATIONS
Healing Food Series
Dr Kenny's Choice

Everprosper Food Industries Sdn Bhd introduced two range of organic noodles; Organic Spirulina Noodle with PPk™ and Organic Atta Noodle with PPk™. These products are specially endorsed and recommended by Dr. Kenny for diabetics and pre-diabetics.

We also have few more products to be released into the market soon, such as coffee and yogurt supplemented with PPk™.

No medication (drugs) for pre-diabetes!
Change diet & exercise!
Supplement your nutrition from natural product!

References

A. Journals

1. **Nazrul,H.,Zuraini,A.,Lee,CL.,Yong,SR. 2014. Improved blood glucose level associated with Polypeptide-k (Diabegard). *International Journal of Pharmaceutical Science Review*,25,147-150.**
2. **Nazrul,H.,Zuraini,A.,Lee,CL.,Yong,SR. 2014. A report of six clinical cases of lowered blood cholesterol profile associated with supplementation with Polypeptide-k(Diabegard), a polypeptide isolated from the seeds of *Momordica charantia*. *Tropical Journal of Pharmaceutical Research*.13,1319 - 1326.**
3. **Nazrul,H.,Zuraini,A.,Yaacob,etc. 2012. In vitro anti-diabetic activities and chemical analysis of polypeptide-k and oil isolated from seeds of *Momordica charantia* (Bitter Gourd). *Molecules*.17,9631-9640.**
4. **Nazrul,H.,Adam,Y.,Yaacob,A.,Zuraini,A. 2011. Preliminary Toxicological Evaluations of Polypeptide-k isolated from *Momordica charantia* in laboratory rats. *International Journal of Biological and Medical Sciences*.**
5. **Lee,I.C.,Yong,YS.,Zuraini,A.,Azhar,Y.,Nazrul,H. 2011. Effects of polypeptide-k supplemented soft bun on blood glucose level in healthy adults. *International Journal of Nutrition and Metabolism*, Vol.3, 7-10.**
6. **Molfino,A.,Logorelli, F.,Muscaritoli,M.,Cascino,A.,Preziosa,I., Laviano,A. 2010. Metabolic effects of glutamine on insulin sensitivity. *Nutritional Therapy & Metabolism*, 28, 7-11.**

B. Patents

- US Patent - US 6 831 162 B2
- EP Patent - EP 1 171 455 B1
- Malaysia Patent – PI 20004650

UPM
UNIVERSITI PUTRA MALAYSIA
BERILMU BERBAKTI

Recommended by:
Dr. Kenny Yong

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Well Again
TOTAL HEALTH CARE SOLUTIONS

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