

This study supports PharmaTerra's claim that ProBeta® helps promote healthy pancreatic function.

"POSSIBLE REGENERATION OF THE ISLETS OF LANGERHANS IN STREPTOZOTOCIN-DIABETIC RATS GIVEN GYMNEMA SYLVESTRE LEAF EXTRACTS."

"Two water soluble GS3 and GS4, obtained from the leaves of *Gymnema sylvestre*, were tested in streptozotocin treated rats for their effects on blood glucose homeostasis and pancreatic endocrine tissue. In the diabetic rats, fasting blood glucose levels returned to normal after 60 days of GS3 and after 20 days of GS4 oral administration. Blood collected during the conduct of oral glucose tolerance tests was used to assay for serum insulin. GS3 and GS4 therapy led to a rise in serum insulin to levels closer to normal fasting levels. In diabetic rat pancreas, both GS3 and GS4 were able to double the islet number and beta cell number. This herbal therapy appears to bring about blood glucose homeostasis through increased serum insulin levels provided by repair/regeneration of the endocrine pancreas."

Reprinted from Journal of Ethnopharmacology, vol. 30, E.R.B.Shanmugasundaram, K. Leela Gopinath, Radha Shanmugasundaram and V.M. Rajenran. Possible Regeneration of the Islets of langerhans in Streptozotocin-Diabetic Rats Given Gymnema sylvestre Leaf Extracts, pp .265-279, 1990 with exclusive permission from Elsevier Scientific Publishers.

PLAIN TALK

***ProBeta**®™ (Patented) is the exact formulation developed by the research team in the studies. Exclusive worldwide rights to this formulation belong to **PharmaTerra, Inc.** which is in partnership with the Drs. Shanmugasundaram. The term GS-4 was given by the researchers to this formulation in the study. While others use GS-4 to name or describe their product, **ProBeta**® is the only product guaranteed by the research team to be the same as that used in the study.*

A study in animals was undertaken to show that **ProBeta**® was able to cause the regeneration of the pancreas after inducing diabetes in the animals. Prior to this study, it had been assumed that the pancreas, whose *beta* cells manufacture insulin, could not regenerate. Diabetes was induced in the animals using a drug called *streptozotocin* to damage the pancreas. The animals were then treated with **ProBeta**®, and it was demonstrated that the extract caused the pancreas to not only regenerate but also cured the diabetic state which the damaged *beta* cells had caused.

This study is very important for two reasons: 1) it showed that the *beta* cells have an inherent capability to regenerate if the proper conditions are met, and, 2) **ProBeta**® can be given orally to induce the pancreatic *beta* cells and indeed, the entire pancreas to regenerate.

The fact that an orally administered nutritional dietary supplement can induce the pancreas to regenerate is also a landmark discovery since this immediately leads to an important new way in which to regulate elevated blood glucose levels.