

1092-37-359

Minghu Wang* (wmhmax@gmail.com), 2203 James Guthrie Ct. Apt. 2, Louisville, KY 40217,
and **Jiaxu Li** and **James D Johnson**. *Mathematical studies on the anti-apoptotic effects on
pancreatic beta-cells.*

The progression of type 2 diabetes is along with the apoptosis of pancreatic beta-cells. Thus it is critical to investigate the causes of the loss of beta-cells and how to prevent and/or stop the progression. We formulate a mathematical model to this end. The analysis of our fast-slow dynamical model reveals its interesting features. Through the model, we preliminarily found that the intermittent rests of beta-cells in secretion are critical for the cells to survive. Our preliminary data fitting of Pima Indian diabetics validates our findings. (Received August 13, 2013)