Researchers from University of Miami describe findings in enzyme research

Released: Thursday, January 31, 2008 10:39 PM

"The quality and stability of enzyme blends used in islet cell processing are critical for successful human islet isolation (see also Enzyme Research). A wide variability in enzymatic activity among lots of Liberase HI has been reported," investigators in the United States report.

"This study examines the interlot and intralot variability of Liberase HI and the over-time deterioration of enzyme quality based on the analysis of islet isolation outcomes. The data of 169 human isolations processed for clinical islet transplantation, using five different lots of Liberase HI, were retrospectively analyzed. Inter- and intralot variables in the islet isolation were assessed over a 15-month period. The analysis revealed significant interlot differences in the digestion time, prepurification islet counts, percent recovery, viability, and glucose stimulation insulin index. Moreover, a significant decrease in the pre- and post-purification islet yield per pancreas weight (IEQ/g) in isolations processed by two different enzyme lots used over a 15-month period was observed, suggesting a progressive deterioration of enzyme quality. Our data demonstrate a significant lot-to-lot related variability in islet isolation outcomes," wrote T. Yamamoto and colleagues, University of Miami.

The researchers concluded: "In addition, the over-time decline in isolation outcomes processed using a single enzyme lot was observed even when the enzyme blends were used within the expiration dating specified by the manufacturer."

Yamamoto and colleagues published their study in Transplantation (Deterioration and variability of highly purified collagenase blends used in clinical islet isolation. Transplantation, 2007;84(8):997-1002).

For additional information, contact H. Ichii, University of Miami, School Medical, Diabetes Research Institute, 1450 NW 10th, Miami, FL 33136, USA.

Copyright 2008 Proteomics Weekly via NewsRx.com