



The ICR Newsletter

Volume 2, Issue 4, November 30, 2008

Beautiful Setting Adds to Great Success of the Islet Workshop


On October 3rd 2008, Newport Beach, California saw a gathering of 122 scientists from over fifty universities, institutes, or companies specifically devoted to human islet research at the 4th Annual ICR Islet Workshop. Nineteen internationally renowned speakers presented their most recent research on "Assessing Beta Cells In Vitro", "Collagenase", "Assessing Beta Cells in Vivo", and "New Approaches in Islet Transplantation". Ten countries were represented at this conference sponsored by the National Center for Research Resources, the National Institute of Diabetes, Digestive & Kidney Diseases, and the Juvenile Diabetes Research Foundation International. Some of the Workshop Presentations can be found at the ICR website under <http://icr.coh.org/2008103.asp>. The Workshop encouraged dialogue between the presenters and the audience during discussion periods, breaks and meals. A post workshop survey of attendees conducted by the ABCC reported overall enthusiasm for the workshop. Suggestions included increasing future workshops to two days and expanding discussion times among the participants. If you attended the conference and have not had a chance to answer the survey, please email Martha at mantler@coh.org for a survey form.

Season's Greeting



The ICR Executive

Committee  and the ABCC

would like to wish all 

joyous holidays  and

loving times  with family



and friends.

Peace

Attendees at the 4th Annual ICR Islet Workshop and Counting Workshop on October 3rd at Newport Beach California

(Photographs courtesy of Martha Antler)





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FEATURED ICR:

UNIVERSITY OF PENNSYLVANIA

The University of Pennsylvania was one of the ten original centers that received funding as an Islet Cell Resource Center in 2001 and one of only four centers whose grant was renewed in the second round of funding. Under the leadership of Dr. Ali Najji, a transplant surgeon and diabetes researcher for over thirty years, the Philadelphia based center has provided over 320 shipments and 8,125,400 islet equivalents to ICR approved investigators. They have also performed 19 islet transplants into diabetic patients at their center at the University of Pennsylvania and have shipped 3 clinical grade human islet preparations to the University of Virginia in a collaborative trial with patients of Dr. Kenneth Brayman. The group at Penn is known for their work in transplant immunology as well as islet potency and many of their basic research studies center around these two topics. They also pride themselves in harvesting islets from many type 2 diabetic donors for investigation into the metabolism, hormone release and genomics of β cells.

ICR Director: Ali Najji MD , **Islet Isolation Team Director:** Chengyang Liu MD,
Isolation Team: Yangjing Li, Yanping Luo, Zaw Min, Kumar Vivek MD, Min Wang MD, Zhonglin Wang MD, Ming Yu MD
Transplant Coordinators: Eileen Markmann BSN, Maral Palanjian BSN
Research Administrative Coordinator: Diane McLaughlin BA

Islet Research History Lessons – Cryopreservation of Islets

Frozen islets! Why would anyone want to do this? There are several reasons in the clinical setting why cryopreservation may be preferred. The ability to hold islets for extended periods of time allows more flexibility when transplanting patients: for pretreatment of the recipient with immunosuppression; to allow transplantation of multiple donors with a variety of HLA phenotypes; to add critical mass to a fresh preparation; to perform *in vitro* modulation of the donor tissue. In a research environment, freezing of viable islet tissue has several benefits including: testing of the same preparation at different time points without degradation from prolonged culturing; the option to compare multiple preparations in a single assay; and the ability to store aliquots of islets to be thawed only when needed for crucial experiments. The preservation of Islets of Langerhans through freezing is a more difficult process than that used for lymphocytes or cell lines. Because islets are not a single cell type, but a network of many different cells working together as an organelle, care must be taken to protect each cell type during the freezing and thawing process. Although a few protocols have been developed for this process over the years, the most widely used method comes from our frigid neighbor to the north. Dr. Ray Rajotte and his colleagues from Edmonton, Alberta, Canada, are usually recognized as the cryopreservation experts for all species of isolated islets. Their protocol incorporates three distinct steps: 1. equilibration of cryoprotectant in the islet tissue through a multi-phase procedure; 2. a slow, controlled freeze followed by a rapid thaw; 3. Return of the islets to a physiological medium. Dimethyl sulfoxide (DMSO) has been the cryoprotectant of choice for islets. Although the process may be tedious and time-consuming, in certain circumstances this protocol has unlimited benefits. In 2007, the Edmonton group published a follow-up paper on a patient that had been transplanted with both fresh and frozen islets who had maintained a near normal HbA1c and insulin secretion for over 13 years.

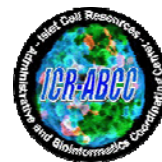
Accompanying photo courtesy of Camillo Ricordi

Not Getting Enough Acinar? Maybe We Can Help!

by James Cravens

Over the past two decades a number of interesting discoveries have been made using isolated non-endocrine pancreatic (acinar) tissue, especially for beta cell expansion studies. In the past several years, quite a few investigators have contacted the ABCC in hopes of obtaining this type of tissue from the ICR Consortium. Although the ICR is not capable of supporting this endeavor financially, the ABCC is willing to help coordinate "acinar" distribution. In order for the ABCC to fully understand the demand and to help facilitate the distribution, we would like to hear from you. If you are an ICR-approved investigator who is in need of isolated non-endocrine pancreatic tissue for your research, please contact James (jcravens@coh.org) and let him know the details of your request (quantity, frequency of shipments, etc.). If you are part of an ICR islet isolation center that is willing to distribute the tissue that is leftover after islet purification, please inform James of the requirements for distribution (cost to the recipient, shipment media, vessel, timing, etc.). Your input would be greatly appreciated.





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Coming Events:

ICR Steering Committee Meeting
February 5th and 6th, Birmingham, AL

**9th Annual Rachmiel Levine
Diabetes Symposium**
<http://www.sciencering.com/forums/viewtopic.php?t=298>

March 18th-21st, 2009, Disney's Grand Californian Hotel and Spa - Anaheim, CA

American Transplant Congress
<http://www.atcmeeting.org/>
May 30th - June 3rd, 2009, Boston, MA

**American Diabetes Association
69th Scientific Sessions**
http://professional.diabetes.org/Congress_Display.aspx?TYP=9&SID=128&CID=57909
June 5th-9th, Morial Convention Center
- New Orleans, LA

ICR Consortium Statistics

Isolations Reported in the ABCC Database				
To Date	Total	Clinical	Research	Not Used*
2008	235	11	208	16
Cumulative**	1166	205	894	67
IEQs Reported in the ABCC Database				
To Date	Total	Clinical	Research	Not Used*
2008	55,157,020	5,281,381	48,731,373	1,144,266
Cumulative**	305,320,911	92,954,452	205,863,437	6,503,022
ICR Basic Science Distribution Program Activity				
To Date	# Approved Protocols	#Shipments	#IEQs Distributed	
2008	22	808	21,163,600	
Cumulative**	162	2720	76,092,399	

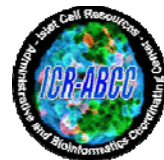
*Not Used-Poor quality pancreata and/or islets; or no permission for research

**Cumulative data reported from 12/1/2004 to 11/24/08

Third Counting Workshop at Newport Beach Had Record Turnout

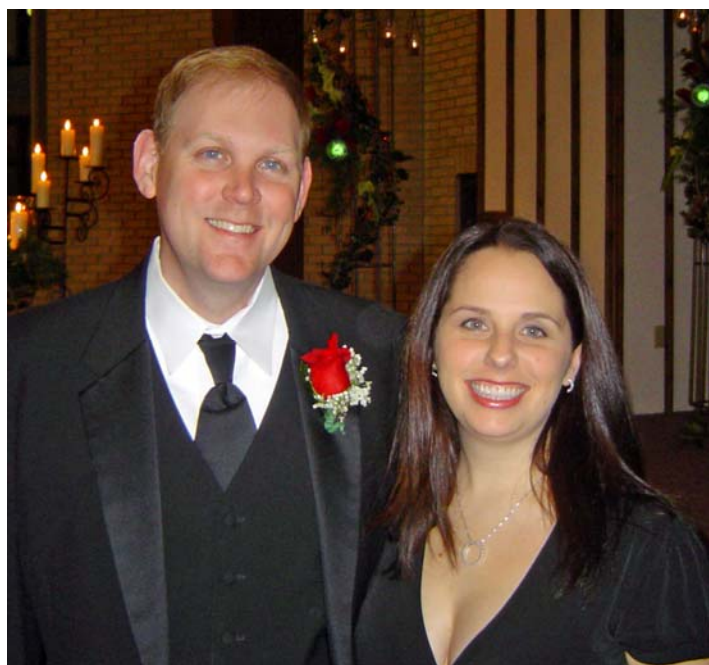


The Administrative and Bioinformatics Coordinating Center (ABCC) held its third Counting Workshop following the Islet Workshop at Newport Beach, California. This seminar was attended by 44 participants representing 22 institutes from around the world, making it the largest program to date. Barbara Olack of the ABCC offered an interactive presentation on the difficulties of human islet counting and standardization efforts being conducted by the ABCC through the ICR Consortium. Each participant received the ICR Counting Manual containing a calibrated grid, coded practice sheets of photographed islets, and exercise sheets of additional islet photographs. Workshop attendees were encouraged to complete the exercise of islet counting and return their results to Barbara Olack at bolack@coh.org to see how their counting techniques compared to the ICR Consortium Standard. Anyone who would still like to participate in this program may send in their results at anytime. An electronic counting results sheet can be downloaded at <http://icr.coh.org/workshops.asp> under Counting Workshops on the ICR website. Following the ABCC presentation, Felipe Echeverri of Biorep Technologies, Inc., a firm that works closely with the Diabetes Research Institute at the University of Miami, demonstrated their newest version of an automated, digital counting device and software program which generated much interest from the audience.



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Autotransplantation: A Salvation for Pancreatitis Patients



University of Alabama- Birmingham
Auto Islet Transplant Patient
Jason Floding and his wife Molly

I had been hospitalized almost 1 week of every month for 20 months with pancreatitis. Each time I was admitted it would begin with excruciating pain and a ride that seemed to take a lifetime. When my local gastroenterologist first diagnosed me with pancreatitis he mentioned a procedure that would ultimately be my answer, auto-islet cell transplant. My pancreas was dying within my body and if let go or if I had my pancreas removed, I would develop Brittle Diabetes, one of the most deadly and difficult types of diabetes to control. I was referred to Dr Wilcox at UAB who then referred me on to Dr John Christein. My wife and I met with Dr. Christein and his staff to go over the details of this procedure and we decided that this was the best option for me. On March 14, 2008 I underwent the procedure to remove my pancreas, harvest islet cells and infuse them into my liver. Although my pancreas had grossly deteriorated, Dr. Juan Contreras and his staff were able to recover enough islets to transplant and prevent the Brittle Diabetes that I feared. Since the surgery I have been able to regain a normal life. I can now travel without the dread of a crippling pancreatitis attack while I am far from home. This is very important because my job requires travel to four different states. My blood sugar is in control with little insulin; I feel better and have more energy than I have had in years. The only real difficult time I have now is explaining to other doctors that I still produce insulin without a pancreas!

The first total pancreatectomy and autoislet transplantation was performed at the University of Minnesota in 1977. Currently, several of the ICR consortium centers combine their expertise of isolating islets with easing the tragedy of small-duct chronic pancreatitis. This disease is very painful and often the only relief comes from removing the whole pancreas. Typically, this procedure would lead to severe diabetes and life-threatening complications. By isolating islets from the excised pancreas and implanting them into the portal system of the liver the ICR centers have allowed many patients to lead normal, pain free lives without the fear of severe hypoglycemic attacks. More information on this procedure can be found at the following websites:

<http://www.surg.umn.edu/diabinst/treatmentspancreatitis/pancreatectomy.html>

<http://stu.wccnet.org/~jmatthew/uabtrans/>

http://www.uic.edu/depts/paff/opa/releases/2001/pancreatectomy_release.htm