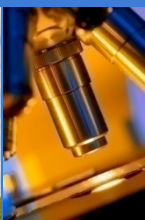


nPOD Viral Workgroup Introduction/Overview



Alberto Pugliese



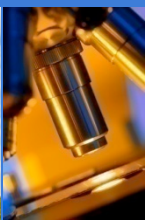
The nPOD Research Model

- Identify synergies, develop project collaborations
- Promote collaboration through focused, coordinated working groups
 - Coordinate study of nPOD cases, throughout the disease spectrum, for integrated studies by multiple investigators
 - Exploit the key unifying element of the shared sample
 - Develop coordinate studies with diversified, complementary approaches and collective input to study design
 - “real-time” data sharing; as activity of these working groups progresses, findings emerge and are shared, informing the group about any changes in strategies and focus on the next questions
 - Web-based connectivity, on line Pathology, LabKey (soon)



Key Questions posed by the nPOD Viral Group

- Can enteroviruses or other viruses be identified, isolated?
- Are there replication-defective enteroviruses?
- Is there an acute and/or or chronic (persistent) infection?
- Do viruses infect β -cells, and/or other pancreatic cell types?
- Could the same viruses detected in pancreas infect immune cells and hence lymphoid tissues? Could this have consequences on immune function?
- Is peripheral blood infection a surrogate marker of viral infection in the pancreas/lymphoid tissues, and a tool to isolate disease-relevant viruses?
- Is there a link between β -cell proliferation and enterovirus infection?



Diversified Approach to the Questions

Immunostaining

- Validation of antibody reagents
- Reference specimens (human islets, cell lines, mouse tissues)
- Links with insulinitis, inflammatory changes (class I, chemokines), regeneration

Immunology

- Study islet antiviral protein responses
- Study virus presence in lymphoid tissues and blood
- Study EV-reactive T cell responses
- Viral content in autoreactive T cells

RNA Studies

- In situ hybridization
- RNA-seq (whole pancreas, LCM islets), cDNA sequencing
- Microarrays
- Metagenomics/computational subtractive analysis
- EV PCR, nested PCR

Protein Studies

- Mass Spec analysis of immunoreactive proteins

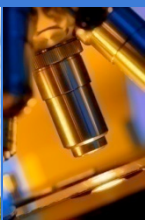
Isolating Virus

- Infection of cell lines and mice from infected blood samples, islets, pancreas, supernatants, RNA etc.



nPOD Viral Group Members (in no particular order and growing)

- Sarah Richardson
- Noel Morgan
- Heikki Hyoty
- Maarit Oikarinen
- Nora Chapman
- Matthias Von Herrath
- Ken Coppieters
- Sally Kent
- Antonio Toniolo
- Gun Frisk
- Roberto Gianani
- Nora Chapman
- Dirk Homann
- Suparna Sarkar
- Vincent Plagnol
- David Schneider
- Skip Virgin
- Joe Petrosino
- Richard Lloyd
- John Kaddis
- Martha Campbell-Thompson
- Irina Kusmarsteva
- Emily Montgomery
- Li Zhang
- Amy Wright





nPOD Junior Investigator Award

The Network for Pancreatic Organ Donors with Diabetes
acknowledges

Sarah Richardson

*for being a champion of collaborative spirit and data sharing
and for her dedication to the field of type 1 diabetes research*



Mark Atkinson, Ph.D.
nPOD Executive Director

January 2012



Alberto Pugliese, M.D.
nPOD Co-Executive Director