Maximizing Your nPOD Sample Request: Using Online Pathology and DataShare to Select the Right Cases for Your Study

MARIA BEERY, MS
NPOD SENIOR BIOLOGICAL SCIENTIST

IRINA KUSMARTSEVA, PHD
NPOD ORGAN PROCESSING AND PATHOLOGY CORE (OPPC) DIRECTOR
Objectives

- Review OPPC functions and case processing
- Find cases of interest
- Review donor clinical history
- View images using Online Pathology
- Order samples using DataShare
Resources

- Previous webinars
  - [www.jdrfnpod.org/for-investigators](http://www.jdrfnpod.org/for-investigators)
    - Online Pathology Information
    - Request Samples via DataShare

- Video tutorials – DataShare Getting Started tab
  - [https://npoddatashare.coh.org/labkey/project/home/begin.view?](https://npoddatashare.coh.org/labkey/project/home/begin.view?)

- Sample request guidelines – DataShare Specimen Inventory tab

- E-mail
  - [npod@pathology.ufl.edu](mailto:npod@pathology.ufl.edu)
Core Activities

- Receive and process organs for fresh, frozen, and fixed tissue samples.
  - We accept cases 24/7!
- Perform cell isolation and prepare serum and plasma.
- Screen tissue by immunohistochemistry.
- Scan whole slides to preserve digital images.
- Quality Control screening of all tissues received including DNA, RNA and Cell Viability analysis.
Investigator Support

- Distribute samples to investigators with nPOD approved projects
- Maintain DataShare and Online Pathology databases
  - Provide clinical information and laboratory results for each donor
  - Interpretive reviews of histopathology (Courtesy of Dr. Martha Campbell-Thompson)
  - Access to investigator data and publication links
  - On-line ordering system for samples
nPOD Sample Types

- Pancreas
- Spleen
- Duodenum
- PLN
- nonPLN
- Serum
- Whole blood

- OCT Frozen Tissue Blocks frozen in OCT media
- Snap Frozen Vials with or without RNALater
- Paraffin Formalin-Fixed Paraffin Embedded Tissue blocks
- Paraffin or OCT Slides
- Fresh Tissue
- Cryopreserved Cells
- Serum
- Whole blood
Case Processing Basics

Sectioning of Pancreas

Dividing tissue into OCT, Paraffin & Vials
## Previous Screening Panel

<table>
<thead>
<tr>
<th>Stain</th>
<th>What does it show?</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>H&amp;E</td>
<td>General Morphology of the Tissue.</td>
<td><img src="image" alt="H&amp;E Example" /></td>
</tr>
</tbody>
</table>
| Ki67+Insulin   | Insulin: Are there still insulin-producing Beta cells in the islet?  
                | Ki67: Is there cell proliferation?                     | ![Ki67+Insulin Example](image) |
| CD3+Glucagon   | Glucagon: Are there still glucagon-producing Alpha cells in the islet?  
                | CD3: Are there T-cells present and if yes, are they attacking islets? | ![CD3+Glucagon Example](image) |
## Current Screening Panel

<table>
<thead>
<tr>
<th>Stain</th>
<th>What does it show?</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>H&amp;E</td>
<td>General Morphology of the Tissue.</td>
<td><img src="image1" alt="Example Image" /></td>
</tr>
<tr>
<td>Somatostatin+Insulin+Pan Polypeptide+Glucagon</td>
<td>Hormone-producing Beta, Alpha, Delta, or PP cells in the islets.</td>
<td><img src="image2" alt="Example Image" /></td>
</tr>
<tr>
<td>Ki67+Insulin+CD3+Glucagon</td>
<td>Hormone-producing Beta or Alpha cells in the islets. Ki67: Is there cell proliferation? CD3: Are there T-cells present and if yes, are they attacking islets?</td>
<td><img src="image3" alt="Example Image" /></td>
</tr>
</tbody>
</table>
Insulin Positive Islet with Insulitis - Case 6198 - T1D 3 year duration

CD3+/Ki67+

Glucagon

Insulin +

CD3+

Ki67+
Insulin Negative Islet with Isletitis

nPOD, Kusmartseva, 2016
Special Requests

- Screen new blocks or blocks that have not been cut yet
  - Contact us prior to ordering

- Special stains
  - Congo red – amyloid
  - Carbol Chromotrope – eosinophils
  - CD markers
  - Cytokeratin
Online Pathology

- View slides from browser using Webscope or free ImageScope software
  - Internet Explorer recommended
  - Only Webscope will work on Mac

- Annotate images and take snapshots

- View clinical history and pancreas histology concurrently

- Advanced search function
Sample Ordering via DataShare

- View detailed clinical histories
- View active projects for each case
- Search for available samples
- Use shopping cart and monitor request status
Live Demo

- http://www.jdrfnpod.org/for-investigators/
- http://ahc-path-apr01.ahc.ufl.edu/Login.php
- https://npoddatashare.coh.org/labkey/login/home/login.view