

nPOD Online Pathology - Viewing Donor Data and Slides

1. Introduction

nPOD utilizes two databases to provide information about our donors and allow for online sample ordering. This document gives a basic guide for how to navigate the Online Pathology database and use it to select cases of interest.

We recommend using our [Online Pathology site](#) (Aperio eSlide Manager) to view *basic* donor information along with slides that have been screened by the nPOD Organ Processing and Pathology Core (OPPC). Use [DataShare](#) to order samples and view *detailed* information about each donor's admission and clinical history, as well as lab results, HLA, demographics, and more. **Please note:** DataShare is only available to investigators with an approved application ([Apply to Join nPOD](#)).

Online Pathology is a great resource for choosing paraffin and OCT blocks of interest; OPPC has scanned H&E slides for nearly all available blocks, as well as slides stained by IHC for insulin, glucagon, somatostatin, CD3, CD45, and Ki-67. Once you have chosen cases and sample blocks, use DataShare to request slides, vials, or cells.

2. nPOD Online Pathology – Aperio eSlide Manager

- 2.1. After you log in to [Online Pathology](#), you will see both icons and menu options listing Cases, Specimens, and eSlides (Figure 1). The *Cases* option shows all nPOD cases as well as cases from other sources (various alphanumeric IDs, see Clinical History or Supplemental Notes for source; Figure 2). The *Specimens* option lists sample types linked to cases, but is not a good place to search for information or slides. Opening *eSlides* displays all slide images and uploaded snapshots. Clicking on *Slide ID* will display slide details while clicking on *Image ID* will open the slide image in Aperio WebScope or [ImageScope](#) (Figure 3).

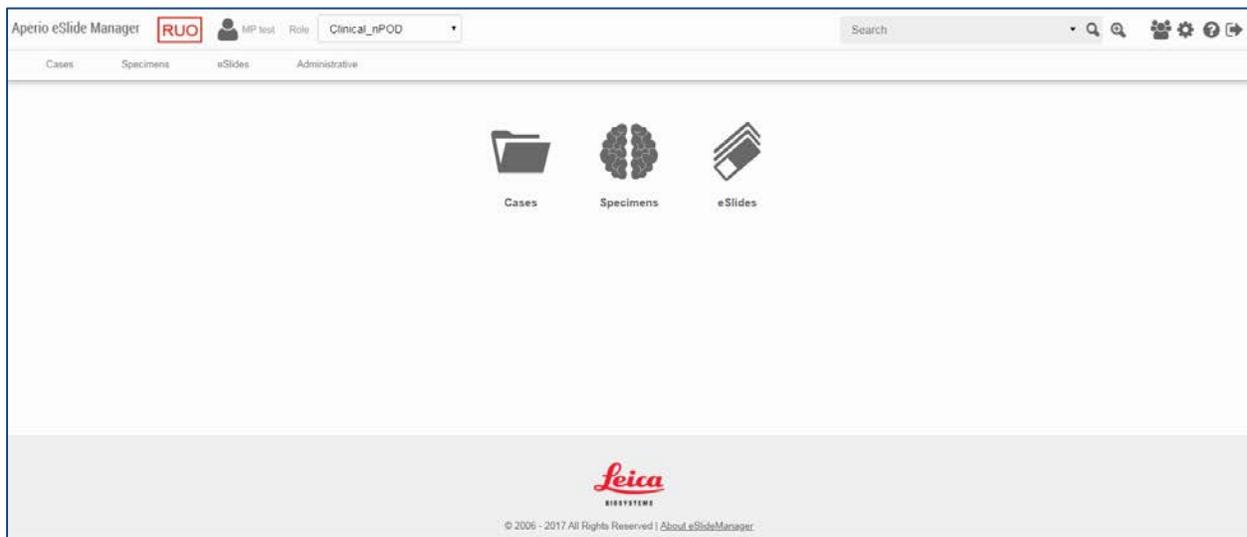


Figure 1. Main Page

2.2. Open Cases by clicking on the folder icon. nPOD Cases are listed by Case ID (6xxx) and may be sorted by any of the column headings (Figure 2).

CaseID	Donor Type	AutoAb (RIA)	Age (years)	Gestational Age (weeks)	Diabetes Duration (years)	Gender	Ethnicity	C-peptide (ng/ml)	HbA1c	BMI	Clinical
H996	T1D	GADA+ (EU)	17			Male	Caucasian			20	Univ Upps Ole f and C islet c Panc
H948	Autoab positive	GADA+ (EU)	25			Female	Caucasian			18	Univ Upps Ole f and C islet c Panc
H911	T1D	Negative (EU)	40			Male	Caucasian			27.2	Died Univ Upps Ole f and C islet c
H1568	Autoab positive	GADA+ (EU)	21			Male		5.9		21.6	Univ Upps Ole f and C islet c Panc
H1464	Autoab positive	GADA+ (EU)	56			Male	Caucasian		5.7	34	Alcoh Univ Upps Ole f and C islet c

Figure 2. Cases Main Page. Sort by clicking on column headings or the Sort link on the top left of the page.

Label	Slide ID	Image	Block ID	CaseID	Block #	Slide Number	SampleID	Stain	Aliquot ID	Comment	Analysis Progress
	Z3904			A9593	1C	01	Pancreas	CD3+Glucagon	Paraffin		
	Z3903			A9593	1C	01	Pancreas	Insulin	Paraffin		
	Z3902			A9593	1C	01	Pancreas	H&E	Paraffin		
	Z3938			A9585	Q2	01	Pancreas	Trichrome	Paraffin		

Figure 3. eSlides Main Page. Clicking Slide ID (left, yellow box) will open case details for each slide. Use the left/right arrows to scroll through the columns.

2.3. Open a Case by clicking on the folder icon to view case demographics, specimens, and slides (Figure 4). Click on the brain icon to open a Specimen and view slide thumbnail images.

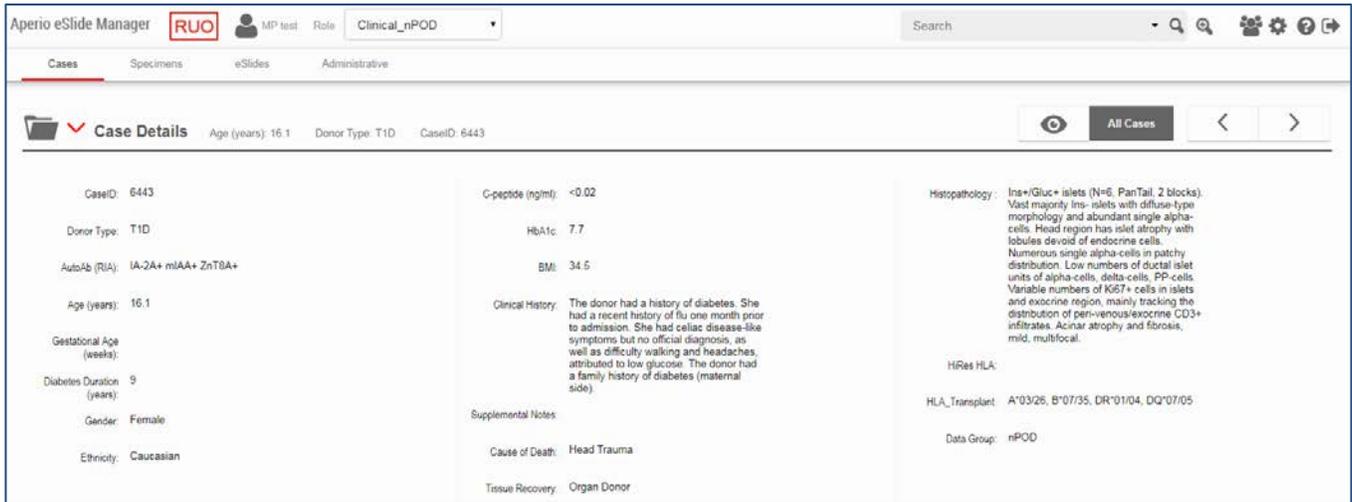


Figure 4. Case Details Page

2.4. To open one image or multiple images at one time, click on each check box, then choose “View Images” on the specimen-level menu bar. Opening images will automatically launch ImageScope, if installed, or the default image viewing program. To use the Web Viewer, click on the ‘eye’ icon on the top right side of the page. This will open a slide tray view for all slides for this case.

Note: For Mac Users, Web Viewer will be automatically launched. For PC Users, please download and install [free Aperio ImageScope software](#).

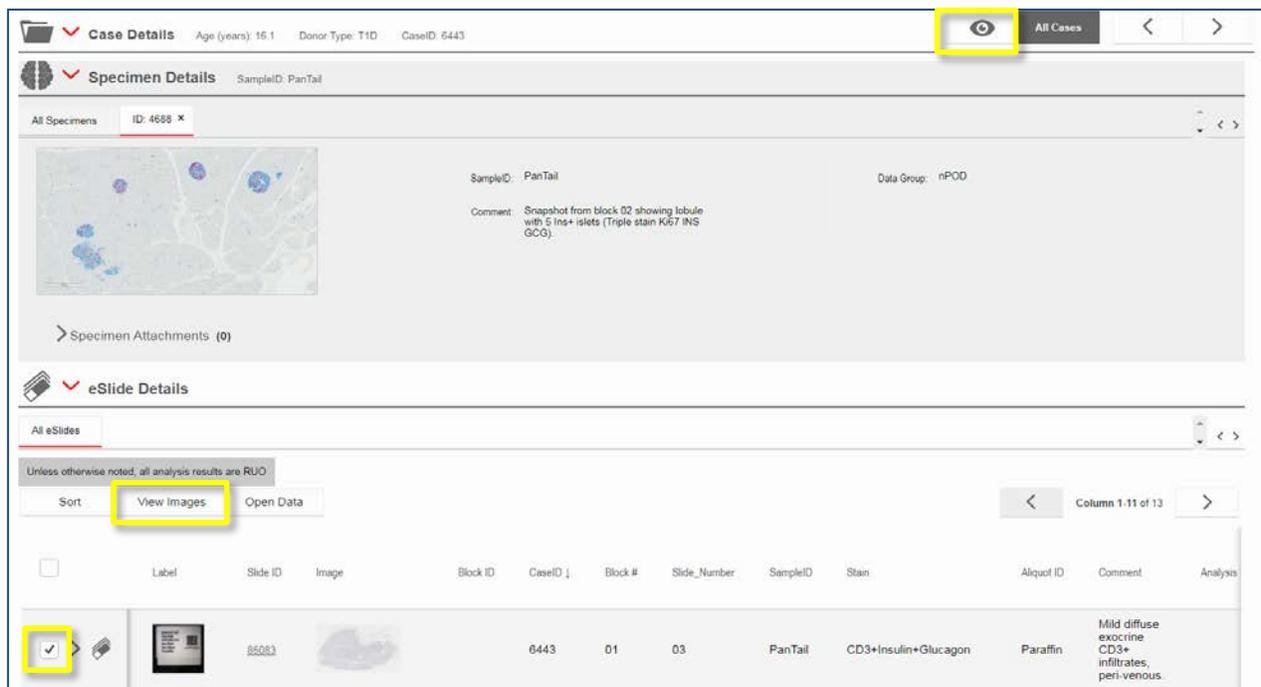
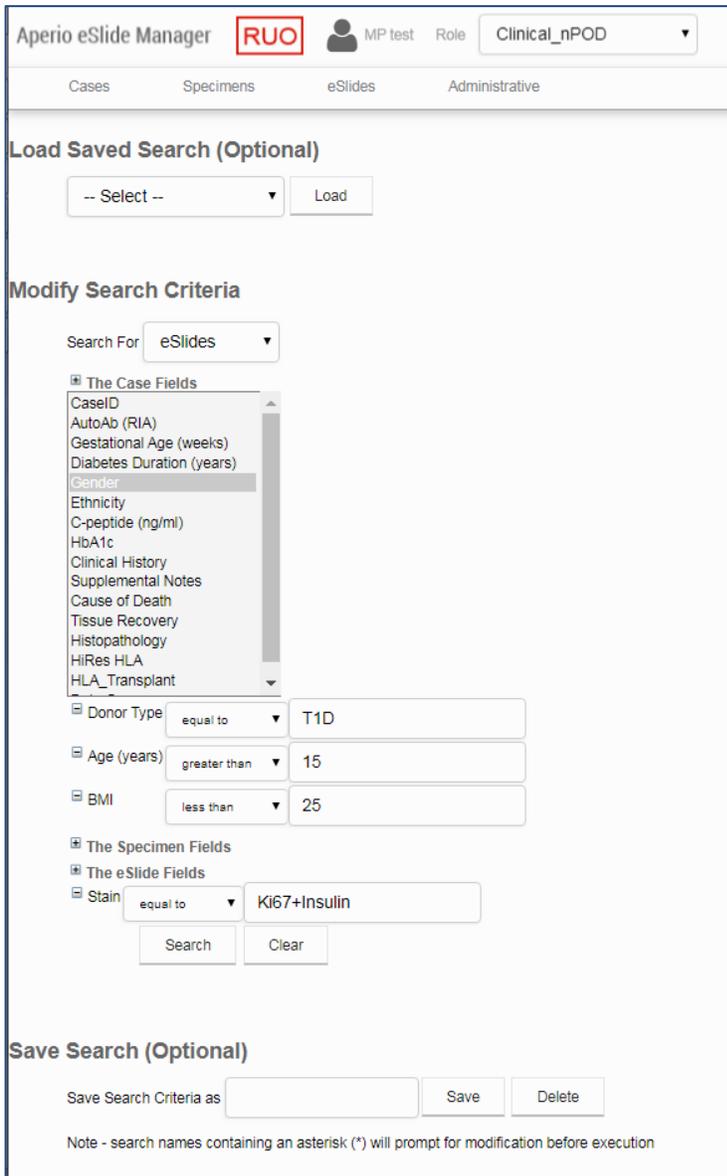


Figure 5. Viewing images from eSlides in Case Specimen folder. Use checkboxes to open multiple images or click on Image ID to open a single image.

2.5. The advanced search function in eSlide Manager allows you to search for eSlides, Cases, or Specimens by a number of fields. Click the  icon in the upper right corner of the screen, then use the drop down menus to choose your search criteria. In the figure below, the search will show all eSlides stained for Ki67+Insulin for all cases where the donor is T1D, older than 15 years old, with a BMI less than 25 kg/m² (Figure 6). Searches may be saved for future use.



The screenshot shows the 'Aperio eSlide Manager' interface. At the top, there is a user profile for 'MP test' with role 'Clinical_nPOD'. Below this are tabs for 'Cases', 'Specimens', 'eSlides', and 'Administrative'. The 'eSlides' tab is active.

Load Saved Search (Optional)
 A dropdown menu shows '-- Select --' and a 'Load' button.

Modify Search Criteria
 Search For: eSlides

The Case Fields
 A list of fields is shown, including CaseID, AutoAb (RIA), Gestational Age (weeks), Diabetes Duration (years), Gender, Ethnicity, C-peptide (ng/ml), HbA1c, Clinical History, Supplemental Notes, Cause of Death, Tissue Recovery, Histopathology, HiRes HLA, and HLA_Transplant.

Donor Type
 equal to T1D

Age (years)
 greater than 15

BMI
 less than 25

The Specimen Fields
 The eSlide Fields

Stain
 equal to Ki67+Insulin

Buttons: Search, Clear

Save Search (Optional)
 Save Search Criteria as: [text box] Save Delete

Note - search names containing an asterisk (*) will prompt for modification before execution

Figure 6. Advanced search for eSlides, Cases, and Specimens in eSlide Manager

3. Viewing eSlides in ImageScope

- 3.1. [ImageScope](#) and Web Viewer allow the user to change the image magnification (using zoom slider or mouse scroll wheel), generate annotations, take image snapshots, and synchronize multiple images. Many of these features may be turned on or off in the 'Image' or 'View' menus or using the ribbon icons.
- 3.2. The two images open in Figure 7 are H&E and Ki67+Insulin from consecutive sections of the same block. Use 'Keep Open' under the 'Image' menu and 'Tile Horizontal' under the 'Window' menu to view images in the

configuration seen below. Then use the manual or smart synchronize button to pan or zoom in both images at the same time.

- 3.3. In the figure of ImageScope below, 1= zoom slider, 2= rotate image (open from 'Image' menu), 3= image thumbnail, 4= magnifier (use the mouse to hover over the area desired for magnification), 5= take/e-mail snapshot and image adjustment, 6= synchronize images and show/hide thumbnail, magnifier, zoom, 7= annotation tools (Figure 7).

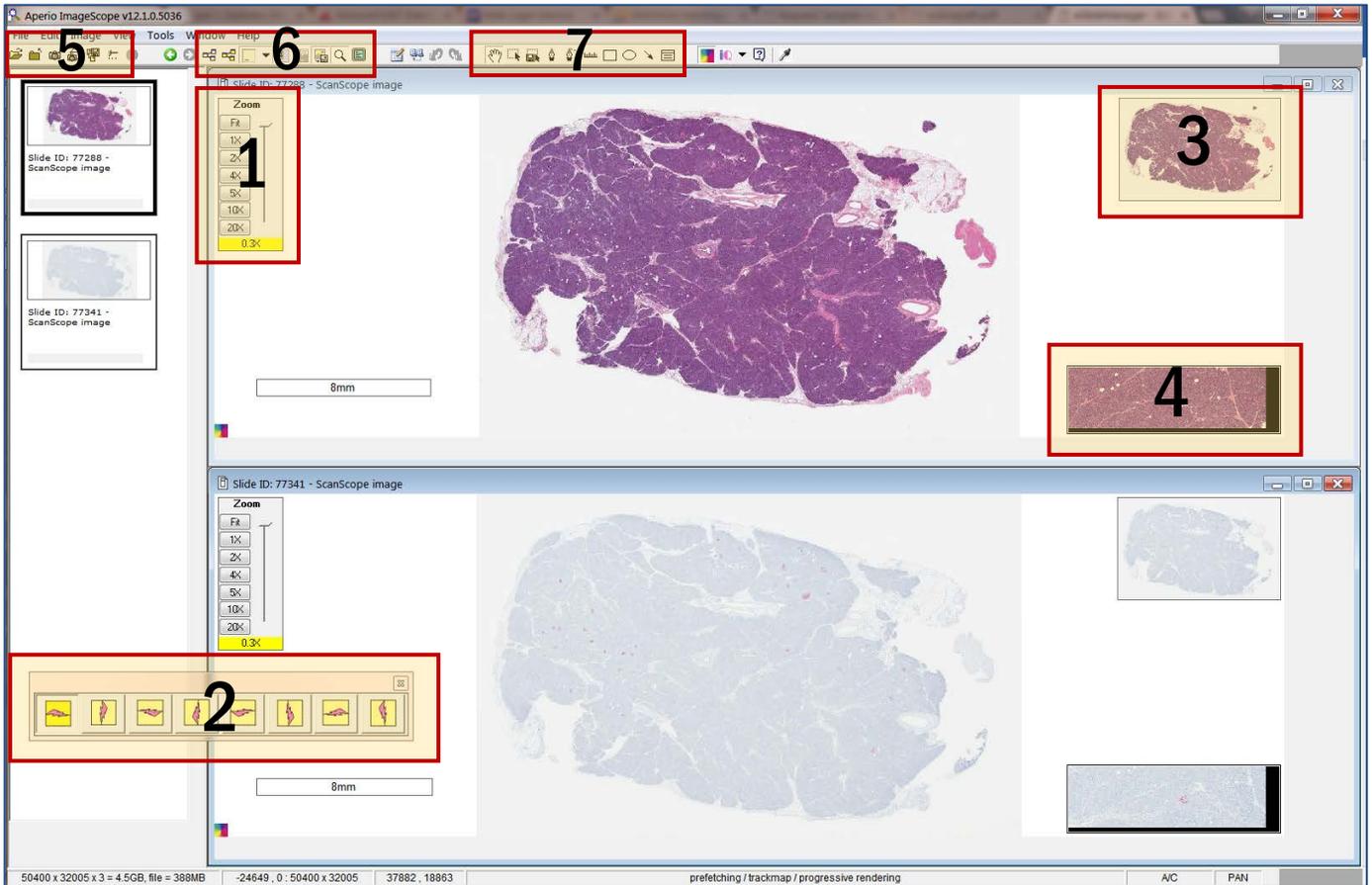


Figure 7. ImageScope features. 1= zoom slider, 2= rotate image, 3= image thumbnail, 4= magnifier, 5= save snapshot, 6= synchronize images and show/hide thumbnails, 7= annotation tools.

3.4. In the figure of Web Viewer below, 1= zoom slider, 2= save snapshot, 3=annotation tools, 4= image thumbnail, 5= open in ImageScope (Figure 8).

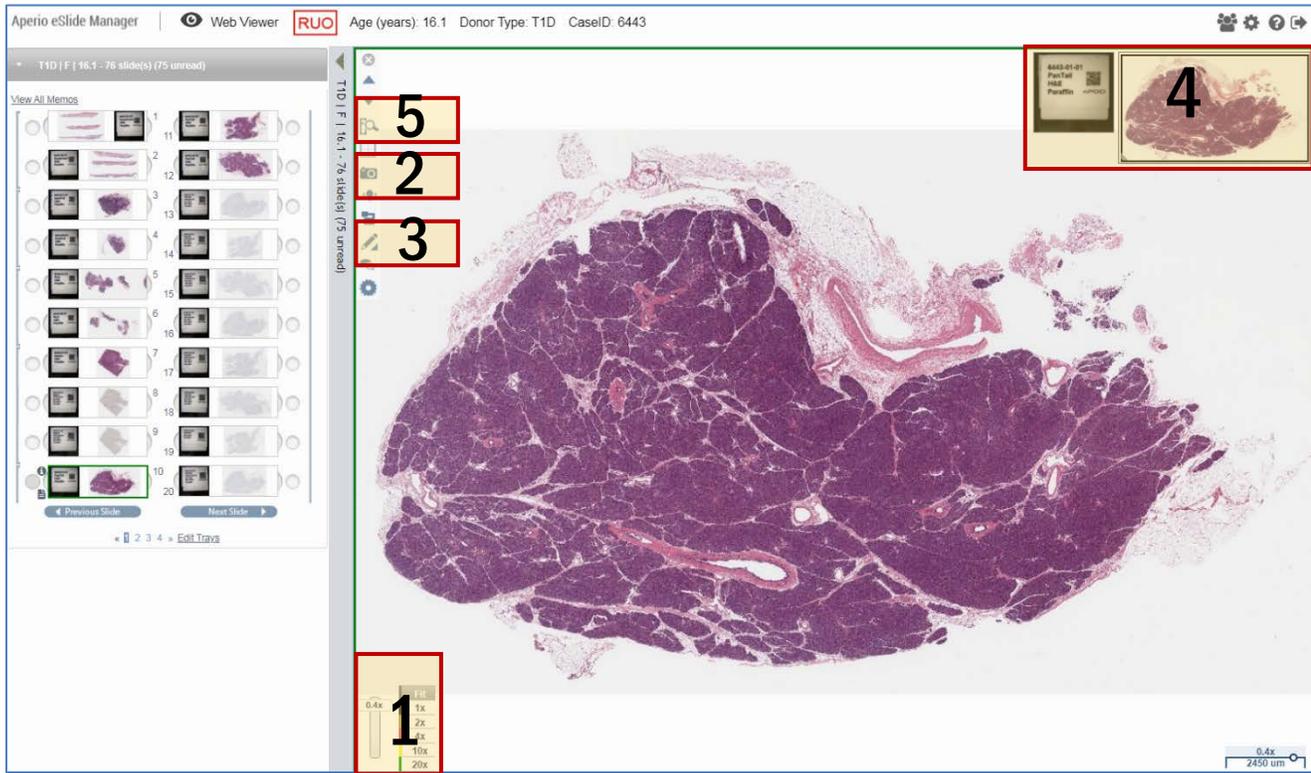


Figure 8 Web Viewer features. 1= zoom slider, 2= save snapshot, 3=annotation tools, 4= image thumbnail, 5= open in ImageScope.

Please note:

If images or data from nPOD’s Online Pathology database are used in your publications, please use standard nPOD nomenclature to refer to the images. Please also include an acknowledgement of the nPOD project in the manuscript. For more information, please review our [Terms of use for nPOD Online Pathology Images](#). Furthermore, you are highly encouraged to seek institutional ethics or IRB review committee regarding any study you undertake when utilizing the information from this database for your research.