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Release Notes

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BIOQUANT Image Analysis Corporation
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BIOQUANT[®]



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LIFE SCIENCE ENHANCEMENTS

TUTORIAL DATA SET ENHANCEMENTS

The following enhancements have been made to the Help System and Tutorial Data Sets.

TOPIC CONTENTS

Sample datasets are now Tutorial Sets

Welcome Screen: New “Open a Tutorial Data Set” button

New: Open Tutorial Set box

Sample datasets are now Tutorial Sets

In BIOQUANT Life Science 2017, the Sample Datasets have been replaced with Tutorial Sets that are opened directly using the Open a Tutorial Set box.

LIFE SCIENCE 2017 TUTORIAL SETS

- Getting Started Set
- Object Type-Rat Head
- Object Type-Blood Vessel
- Measure Cells-1 Cell Type
- Measure Cells-Proliferation
- Measure Cells-Muscle
- Field Type-Spinal Cord
- Trace Type-Specimen Area
- Area % Wand Type-mRNA Grains
- Auto Width Type-Cortex Layers
- Auto Width Type-Retinal Layers
- Density Wand Type-Cells
- Manual Type-Cardiomyocytes
- Segment Assign Type-Cerebellum
- DICOM Sequence-Brain MRI

THE OPEN A TUTORIAL SET BOX CAN BE OPENED IN TWO WAYS

1. From the “Welcome” splash screen, click the “Open a Tutorial Data Set” button

For more information, see “Welcome Screen: New “Open a Tutorial Data Set” button.”

- From the File menu, choose “Open a Tutorial Set.”

For more information, see “New: Open Tutorial Set box.”

Welcome Screen: New “Open a Tutorial Data Set” button

On the Welcome splash screen that comes up when you open BIOQUANT Life Science, a new “Open a Tutorial Data Set” button has been added.

This button opens the Open Tutorial Set box, which lists all the Tutorial Data Sets included with BIOQUANT Life Science. Once a Tutorial Data Set is selected, you can follow its Guide to learn the protocol. The Tutorial Data Sets use Sample Images that were installed when you installed BIOQUANT Life Science 2017.

Following the guides for the Tutorial Data Set that closest matches your protocol trains you on how to use new features and enhancements in the software.

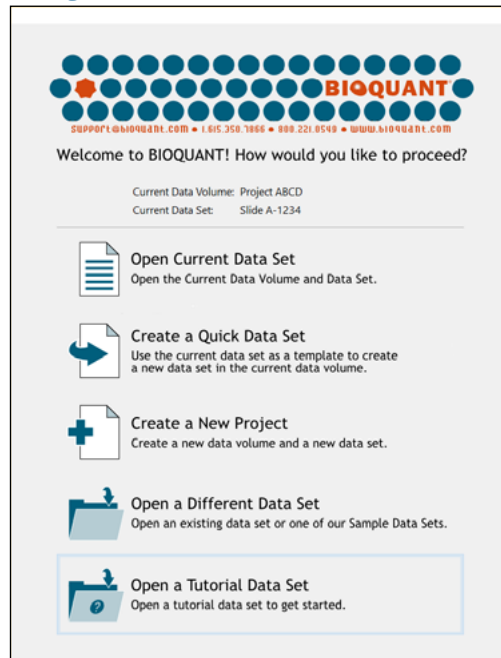
PROCEDURE

Pointer: A good place to start if you have never used BIOQUANT is with the Getting Started Set.

- From the BIOQUANT Splash Screen that comes up when you open BIOQUANT Life Science, choose the Open a Tutorial Data Set option.

Alternatively, if BIOQUANT Life Science is already open, from the File menu, choose Open a Tutorial Set.

BIOQUANT WELCOME SCREEN

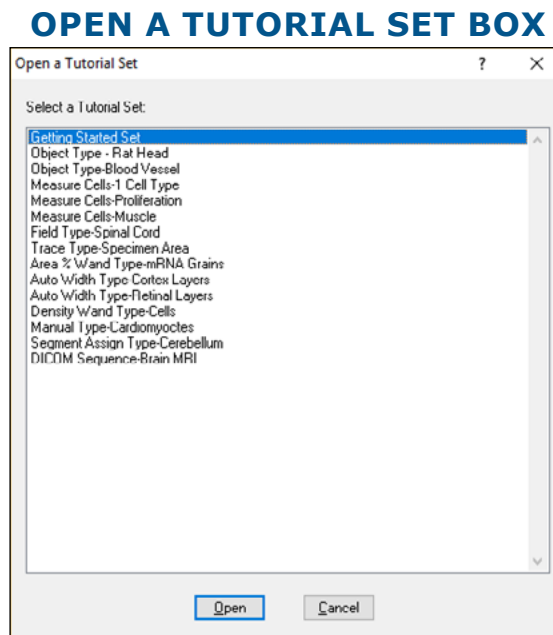


Chose the “Open a Tutorial Set” option.

2. On the Open a Tutorial Set box, from the “Select a Tutorial Set” region, click to highlight the tutorial set, then click the Open button.

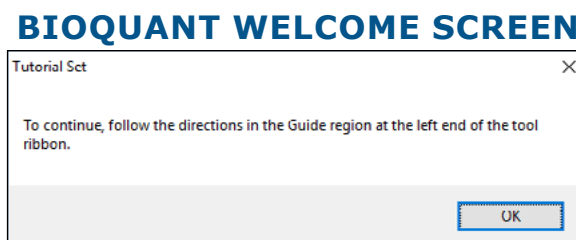
Alternatively, you can double click the tutorial set to open it.

If this is the first time you have used BIOQUANT, choose the Getting Started Set.



Choose “Getting Started Set” if this is the first time you have used BIOQUANT.

3. A “Tutorial Set” message opens that says: “To continue, follow the directions in the Guide region at the left end of the tool ribbon.” Click the OK button.



Click OK and then continue by reading the Guide region.

4. BIOQUANT Life Science opens the tutorial set and loads parameters associated with it. To find out what to do next, start following the directions in the Guide region in the upper left corner of the ribbon.

If you opened the Getting Started Set, the “Welcome” guide in the Guide region of the ribbon tells you different ways of getting written and video help. It then refers you to the “Introduction to BIOQUANT” guide that walks you through the interface.

To see more guides that walk you through sample protocols using sample images, in the guide region, from the Open drop list, click on one of the pre-defined guides.

New: Open Tutorial Set box

If BIOQUANT is already open, from the File menu, choose Open Tutorial Set to open the “Open a Tutorial Set” box.

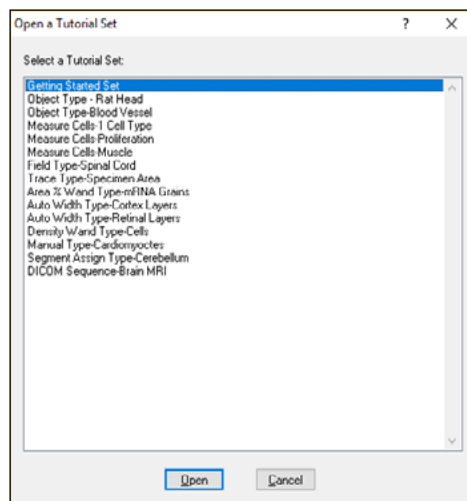
PROCEDURE

1. If BIOQUANT Life Science is already open, from the File menu, choose Open Tutorial Set.
2. On the Open a Tutorial Set box, from the “Select a Tutorial Set” region, click to highlight the tutorial set, then click the Open button.

Alternatively, you can double click the tutorial set to open it.

If this is the first time you have used BIOQUANT, choose the Getting Started Set.

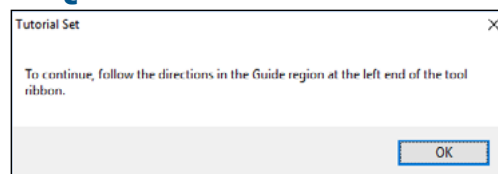
OPEN A TUTORIAL SET BOX



Choose the “Getting Started Set” if this is the first time you have used BIOQUANT.

3. A “Tutorial Set” message opens that says: “To continue, follow the directions in the Guide region at the left end of the tool ribbon.” Click the OK button.

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to BIOQUANT Life Science guide that walks you through the interface.

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NEW VIDEO TUTORIAL HELP

BIOQUANT Life Science 2017 now has integrated video within the BIOQUANT Life Science 2017 Manual. These videos have also been pulled out into a second manual that consists only of videos. There are several ways to quickly open video help.

ON THE TOOL RIBBON, CLICK THE VIDEO TUTORIAL HELP BUTTON

Each region of the Ribbon has a new  video tutorial buttons. Clicking this button opens the video help PDF to the relevant page.

FROM THE HELP MENU, CHOOSE TUTORIAL VIDEOS

On the Help menu, the “Tutorial Videos...” has been added. This opens the front page of the Tutorial Videos manual.

ON THE DESKTOP, DOUBLE CLICK THE LIFE SCIENCE VIDEO TUTORIALS MANUAL

This opens the Tutorial Videos manual in the PDF reader.

COLOR, PSUEDOCOLOR, & CUSTOMIZING ENHANCEMENTS

The following changes have been made to the Color palette, Pseudocolor box, and Customizing box.

TOPIC CONTENTS

[Color Palette Changes](#)

[Customizing Box Changes](#)

[Pseudocolor Changes](#)

Color Palette Changes

The Color palette has changed to offer brighter colors. The color palette is used in several places in BIOQUANT, including:

- The measurement Color drop-list in the Parameters region.
- The Threshold Color drop-list in the Customizing box.

- The Preview Color drop-list in the Customizing box.
- The Wand Color drop-list in the Customizing box.
- The ROI Color drop-list in the Customizing box.

COLOR DROP LIST



The new color palette.

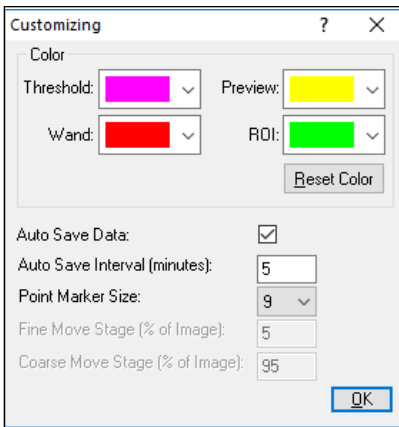
The first six colors and the last two colors in the palette are the same as in previous versions. The middle seven colors have changed.

Customizing Box Changes

The new color palette is used drop list in the Color region of the Customizing Box.

In addition, the ROI color can now be set on the Customizing box.

CUSTOMIZING BOX



Customize System Settings

RESET COLOR BUTTON

If you change the colors for the items in the Color region, the new colors are remembered across BIOQUANT sessions. However, you can change them back to the default colors by clicking the Reset Color button.

CUSTOMIZING BOX: CHANGE COLOR PROCEDURE

1. From the Options menu, choose Customizing.
2. On the Customizing box, in the Color region, change to the new colors you would like to use.
3. Click the OK button to close the Customizing box.
4. Update the Image window to see the changes.
 - Threshold - in the Threshold region of the ribbon, click Refresh.

OPACITY NOTE

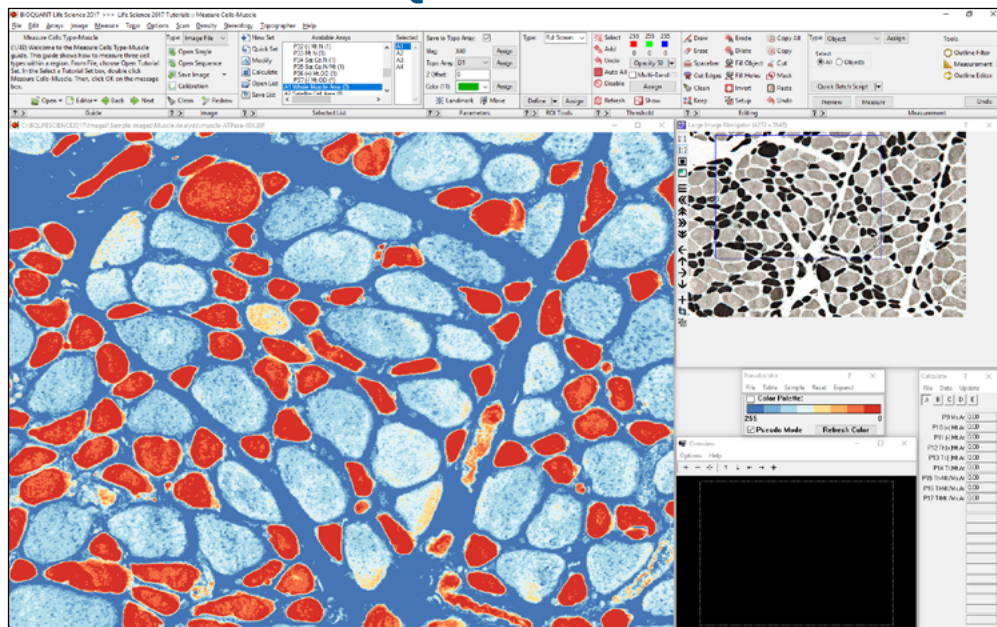
.....
If the Opacity is not set to 100% on the Threshold region, the color that appears in the Image window will not exactly match the Threshold color chosen here since they will be a blend of the histology color and the threshold color.

- Preview Color - in the Measurement region of the ribbon, click Preview.
- ROI Color - do something to refresh the existing ROI, like move the Pan box or define a new ROI.
- Wand Color - in the Measurement region (Density Wand Type), click Define and place some preview circles or rectangles.

Pseudocolor Changes

Pseudocolor is artificial coloring that can be applied to an image (usually monochromatic) to dramatically illustrate density gradients within a specimen.

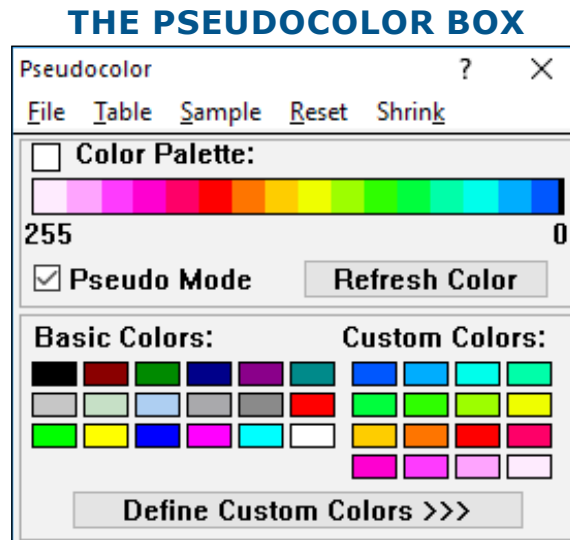
BIOQUANT SCREEN



Pseudocolored image.

NEW FEATURES

- The menu items have been rearranged into the order that they are used: File, Table, Sample, Reset, Shrink



The Pseudocolor Box

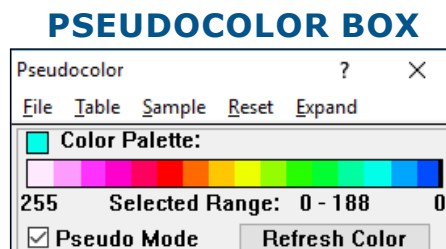
When using Pseudocolor, first the user chooses an available Table out of the 6 table options. (Upon installation, Table 1 has been pre-assigned to the Spectrum sample. Tables 2 - 6 are greyscale.)

Then he/she assigns colors to the palette for that table, using one of the Sample options or by dragging and dropping colors onto the palette.

If the user wants to Reset an existing table to greyscale, the Reset menu is used.

- The Sample palettes have changed to include the following options:

SPECTRUM

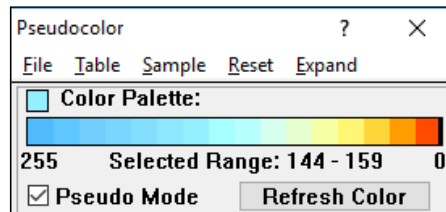


The Spectrum sample palette has been selected.

Uses 16 colors plus black for 0 in rainbow order to emphasize different gray scale values in the image. This color scheme is ideal for samples that gradually change from light to dark.

BLACK BODY

PSEUDOCOLOR BOX

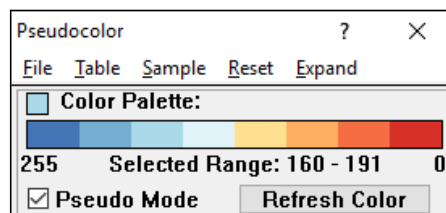


The Black Body sample palette has been selected.

Uses 16 colors plus black for 0 from blue to red, approximating the color of an object as it is heated. This color scheme is best for emphasizing the difference between positive and negative objects in an image since negative objects will tend to be blue and positive object will be orange and red in strong contrast.

DIVERGENT: RED - BLUE

PSEUDOCOLOR BOX

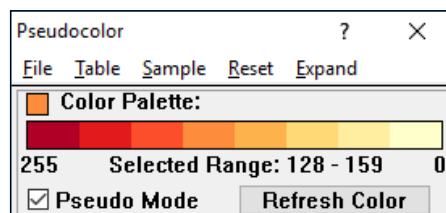


The Divergent: Red - Blue sample palette has been selected.

Uses 8 colors, blending from dark blue to dark red. This color scheme is good at emphasizing the dark objects (tinted dark red) and light objects (tinted dark blue) in an image.

SEQUENTIAL: RED

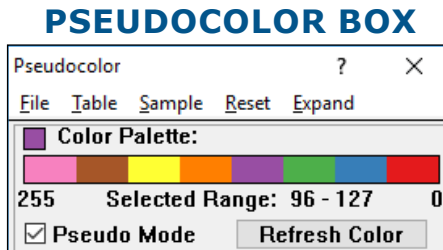
PSEUDOCOLOR BOX



The Sequential: Red sample palette has been selected.

Uses 8 shades of orange, light to dark. This color scheme emphasizes the light objects by tinting them red.

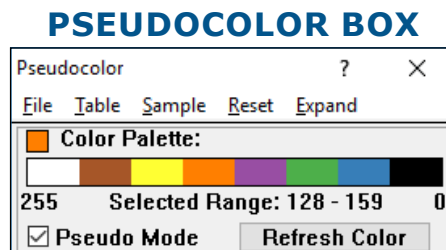
QUALITATIVE: 8 COLORS



The Qualitative: 8 Colors sample palette has been selected.

Uses 8 colors that are chosen to be highly contrasting with their neighbors. This color scheme visually isolates adjacent gray scale ranges. In terms of visual display, it has the opposite effect continuous schemes like Spectrum and Black Body.

QUALITATIVE: 6 COLORS



The Qualitative: 6 Colors sample palette has been selected.

Uses 8 colors, white for the top 255 range, black for the bottom 0 range, and the remaining 6 that are highly contrasting with their neighbors. This color scheme visually isolates adjacent gray scale ranges in the middle. In terms of visual display, it has the opposite effect from continuous schemes like Spectrum and Black Body. This scheme is helpful for the reduce range function because colors outside of the reduced range are automatically mapped to white and black.

- The Reset menu has expanded to include options for resetting the current table or resetting all tables.

Reset Current Table: Resets the current Table checked on the Table menu to gray scale.

Reset All Six Tables: Resets all the Tables on the Table menu to gray scale.

THRESHOLD REGION ENHANCEMENTS

The Threshold region has the following enhancements.

TOPIC CONTENTS

New Auto All Button Thresholds Everything

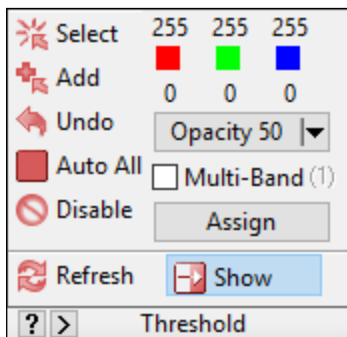
Thresholding Enhancements

Threshold Region Redesign

New Auto All Button Thresholds Everything

The new Auto All button in the Threshold region automatically sets the Red, Green, and Blue threshold ranges to 0 to 255, which thresholds everything in the Image window. This is particularly useful if you want to measure the area of a region of interest.

THRESHOLD REGION



Auto All has set the RGB values to (255,0).

- To threshold everything in the Image window, click the Auto All button. When the Auto All button is clicked, all three of the color channel boxes are set to (255,0).

ASSIGN NOTE

You can assign the RGB values to the Selected array so that whenever the array is chosen, everything is thresholded.

Thresholding Enhancements

The following enhancements have been made to thresholding with the Select and Add buttons.

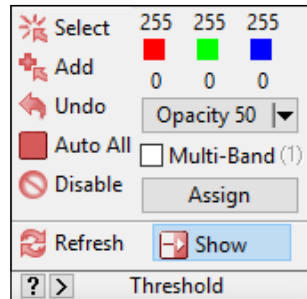
- When thresholding using Select or Add, if the user clicks and drags a box as the second point, it now works.
- The threshold scroll wheel now works with the Add button in the Threshold region.
- The threshold scroll wheel now works if the threshold was set using the Array's comment and

then you click Add in the Threshold region.

Threshold Region Redesign

The Threshold region has been redesigned to make room for the Auto All button.

THRESHOLD REGION



To make room for Auto All, the Assign button has been move to the right column.

Hotkey List has Changed

The Hotkey List has changed to prevent users from using hot keys that are not supported during certain protocols.

IMAGING EXTENSIONS: ENHANCEMENTS

The following enhancements have been made to the BIOQUANT Imaging Extensions add-on.

TOPIC CONTENTS

[Save Navigator Image with Tracings: 4 GB Support](#)

[Pyramid TIF Export](#)

[Dicom Navigator Enhancements](#)

SAVE NAVIGATOR IMAGE WITH TRACINGS: 4 GB SUPPORT

In the Image region, the Save Navigator Image with Tracings option on the Save Image drop list now supports savig up to 4 GB images with associated SVG files.

The file format of the image has changed from BMP to TIF since BMP does not support 4GB images.

SVG editors like Inkscape and Illustrator may not support the 4 GB TIF file, so it may be necessary to edit the SVG files without the associated TIF file.

PYRAMID TIF EXPORT

Users can save up to 4 GB TIF images as Pyramid TIF images.

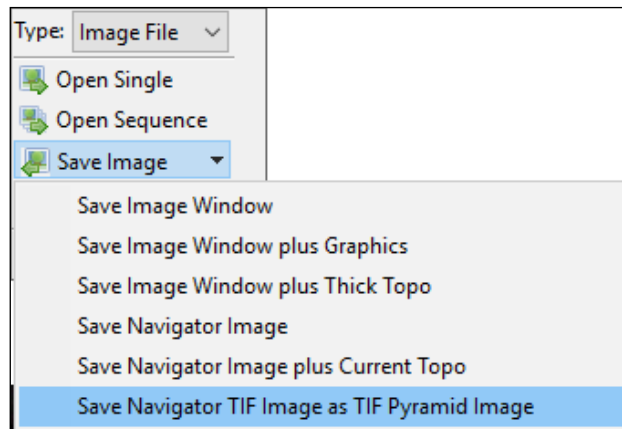
Pyramid TIF files are compatible with a wide range of digital pathology software applications. These include both desktop applications and web server applications, like IIP server.

Pyramid TIF Export is only used to export TIF images for third party software. We do not recommend saving Pyramid TIF images for analysis in BIOQUANT. However, BIOQUANT can open Pyramid TIF images it has saved.

PROCEDURE

1. Open the TIF image that you would like to save as a Pyramid TIF.
2. In the Image window (Image File Type), from the Save Image drop list, choose Save Navigator TIF Image as TIF Pyramid Image.

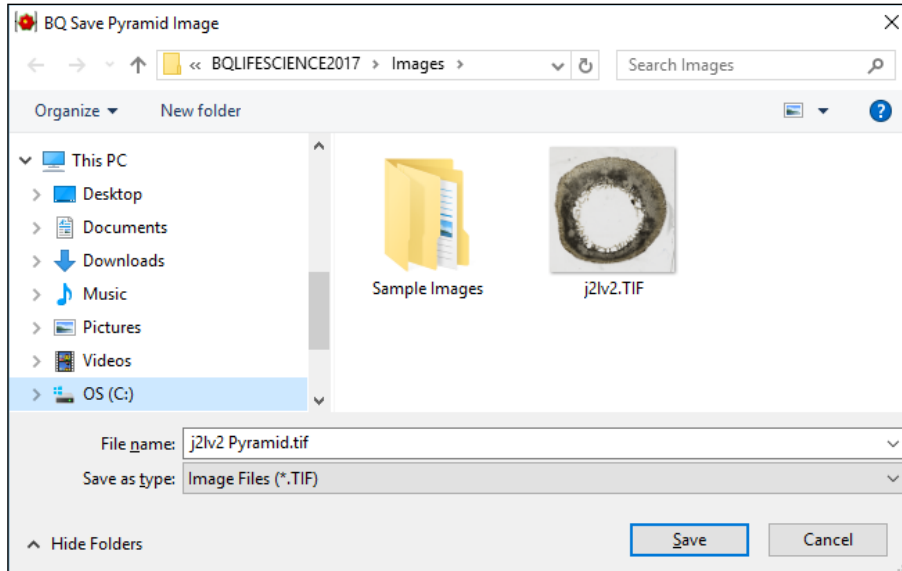
IMAGE REGION: SAVE IMAGE OPTIONS



Choose Save Navigator TIF image as TIF Pyramid Image

3. In the BQ Save Pyramid Image box, do the following:
 - a. Navigate to the location you would like to save the Image.
 - b. In the File Name box, the name defaults to the previous name with “Pyramid” appended to it. Change this name, if desired.

BQ SAVE PYRAMID IMAGE BOX



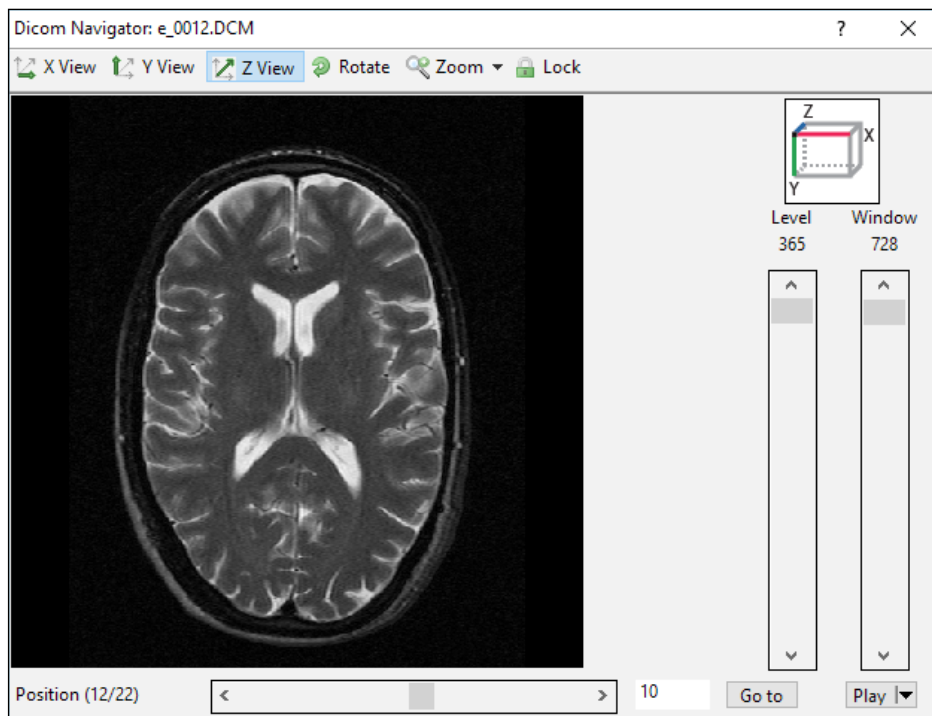
The File Name default is the original file name with “Pyramid” appended to it.

- c. Click the Save button.

The Pyramid TIF image is saved. The original TIF image is still open in the Large Image Navigator.

DICOM NAVIGATOR ENHANCEMENTS

DICOM NAVIGATOR



The Dicom Navigator box.

The Dicom Navigator has the following enhancements:

NEXT AND BACK AUTO UPDATES IMAGE WINDOW

When the user clicks the Next or Back button on the Dicom Navigator, the image is automatically updated in the Image window. You no longer need to click “Lock.”

NEXT, BACK, AND LOCK REFRESHES PSEUDOCOLOR

If the user has Pseudocolor ON, whenever the user clicks Lock, Next, or Back and the system updates the Image window, on Pseudocolor, do a “Refresh Color” to update the Pseudocolor.

SCAN: ENHANCEMENTS

The following enhancements have been made to the BIOQUANT SCAN add-on.

SCAN MULTIPLE SLIDES/SCAN WELL PLATE: STAY LIVE

If you are on a live image, when you open the Scan Multiple Slides or Scan Well Plate boxes the system no longer goes held.