BIOQUANT® OSTEO℠

Cancer Metastasis Protocol

The Referent Data Tool has been used to simultaneously measure the TV, BV, and BS.
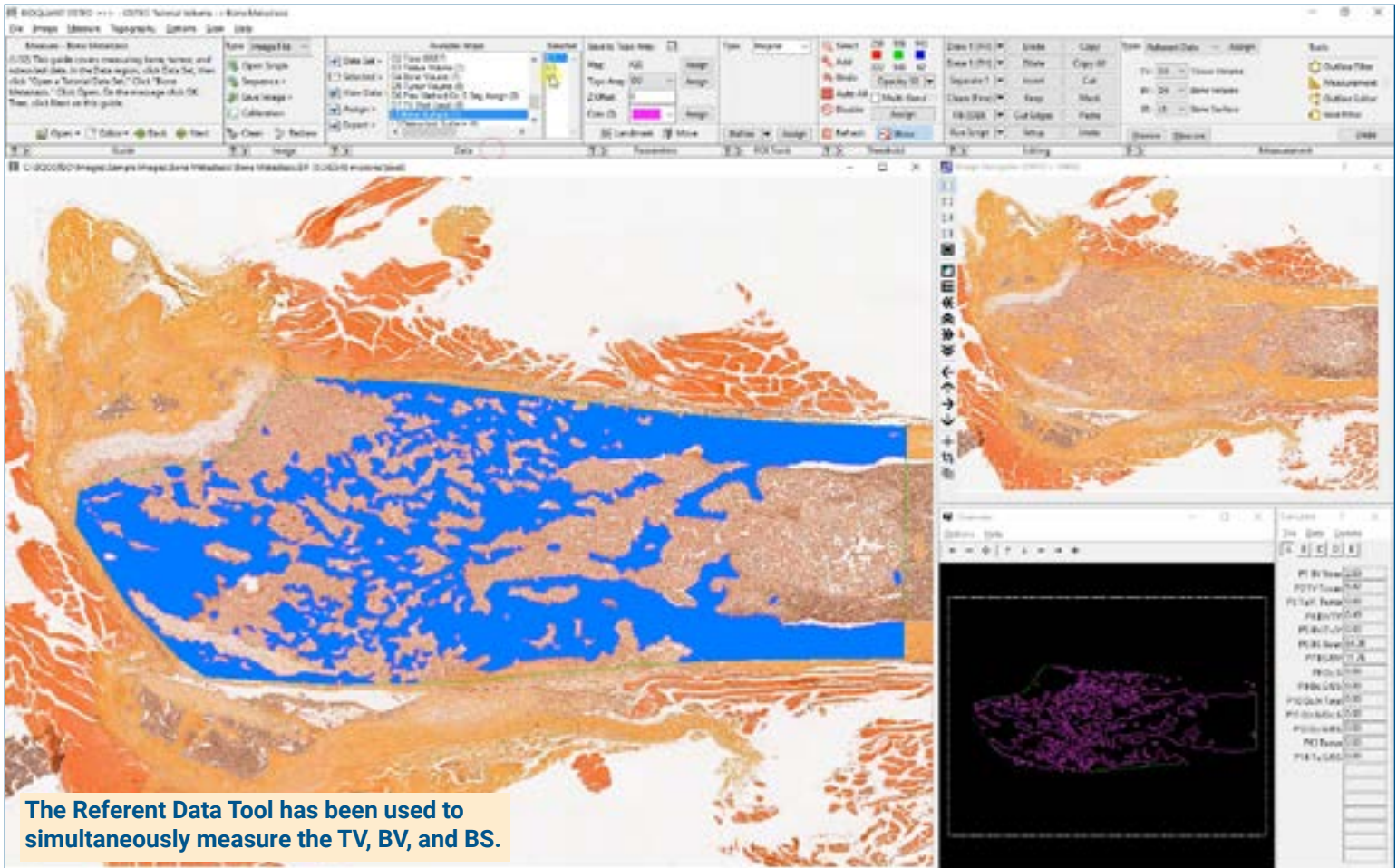
Get the Image

Up to **4 GB Scan** of Section:

- Scans can be generated manually by BIOQUANT OSTEO, automatically by BIOQUANT SCAN, or via a third party slide scanner.
- In BIOQUANT, zoom out so the TV fits in one field of view.

Live Image from Microscope with Camera:

- In BIOQUANT, see a live image of the tissue directly in the Image Window at a low objective like 4X or 2X.
- The Sampling Area does not have to fit in one field. Just use the Referent Data tool on each field.

Define the Tissue Volume

Draw the boundary of the TV in the Image window:

iROI Cursor Tool

Makes it easy to draw the irregular Tissue Volume boundary a fixed distance from the cortical shell and growth plate.

Rectangle TV Tool

Defines a rectangular Tissue Volume with known micron dimensions a consistent distance from the cortical shell and growth plate.

Use the Referent Data Tool

Click **Preview** to automatically:

- Threshold the bone by color
- Fill in small holes/cracks
- Preserve void spaces
- Trace the bone

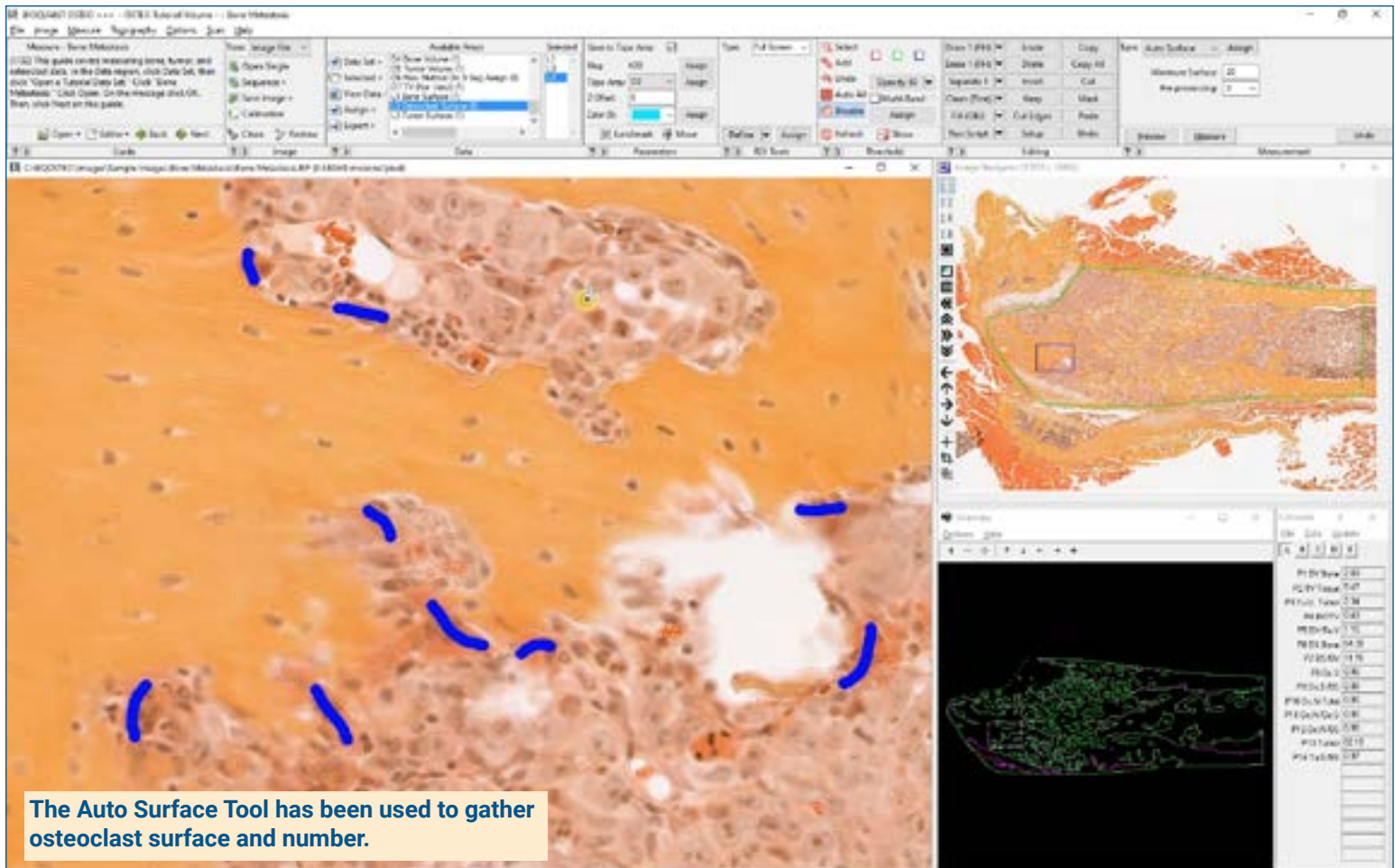Use **Thresholding Editing** tools like Draw, Erase, Clean, Erode/Dilate.

Click **Measure** to simultaneously record:

- TV, BV, BS
- BV/TV, BS/BV, Tb.N, Tb.Dm, Tb.Sp.

Repeat, this time by using the **Tumor Volume** array. Referent Data collects:

- Tu.V, Tu.S
- Tu.V/TV, Tu.V/BV, Tu.S/BS

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The Auto Surface Tool has been used to gather osteoclast surface and number.

Zoom In or Change Objective

Digital Scan in **Large Image Navigator**:

- Zoom in to higher magnification.
- Pan to a field along the surface of the bone looking for osteoclasts.

Live Image with Microscope:

- Change to a higher objective.
- Move to a field along the surface of the bone looking for osteoclasts.

Use the Auto Surface Tool

Use the **Draw Threshold** tool to trace the bone-osteoclast contact surface.

Using the Auto Surface tool, click **Preview**, BIOQUANT automatically outlines the osteoclast surface.

Click **Measure** to simultaneously record:

- Oc.N, Oc.S
- Oc.N/BS, Oc.S/BS

Repeat for Other Fields

Continue to Pan around the bone surface and repeat osteoclast measurements.

Redraw prevents duplicate measurement by redrawing the measurement tracings of existing Osteoclast surface.

Auto ROI keeps the field of view within the Tissue Volume.

This is a sample protocol. It is easily modified for different animals, tissues, embedding methods, and stains. All parameters can be renamed. New calculations can be added. Both live imaging and scans are supported. Measure at the magnification that is best for your histology. Find out more: www.bioquant.com/osteo