BIOQUANT® OSTEO

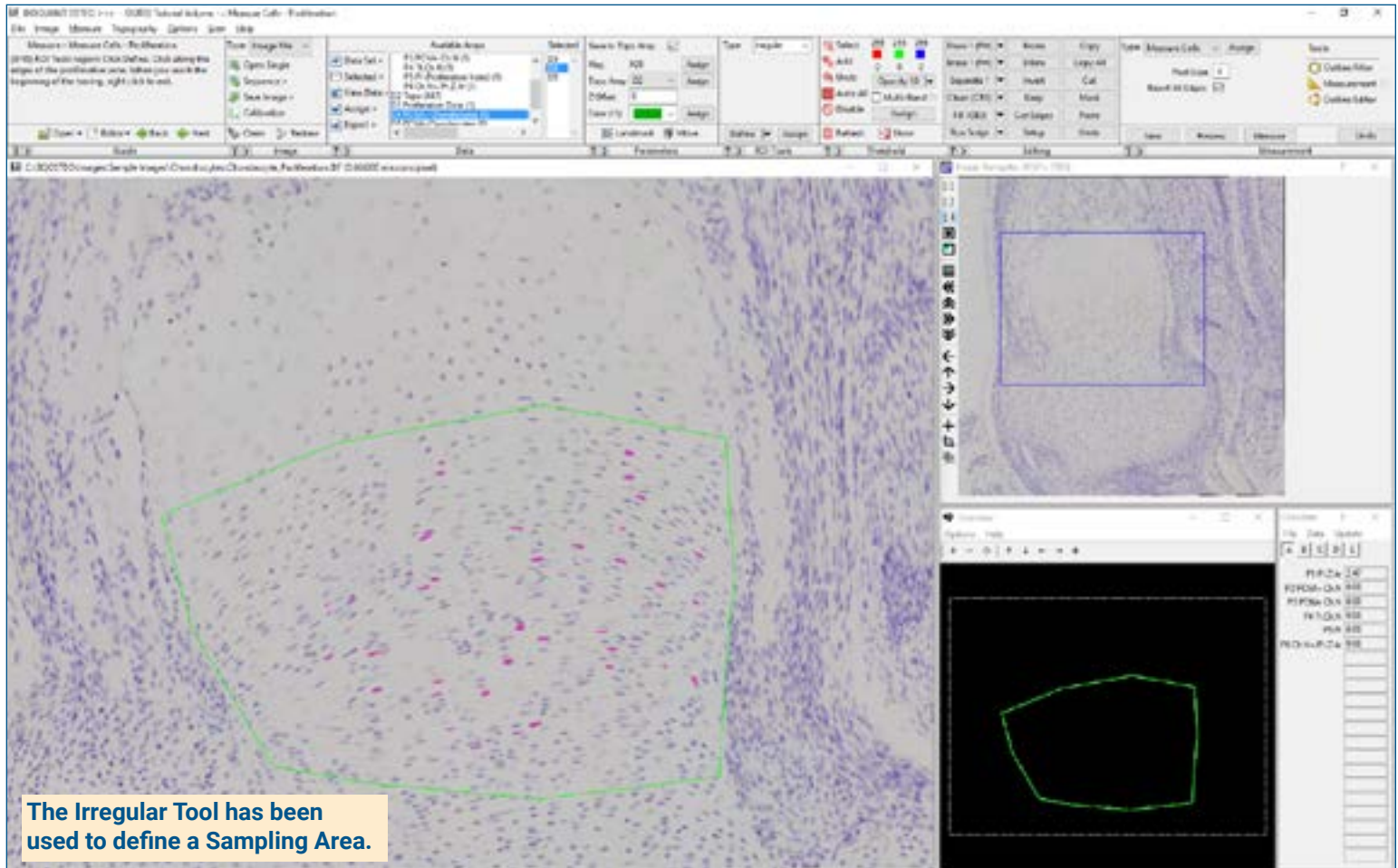## Chondrocyte Proliferation Protocol

The Irregular Tool has been used to define a Sampling Area.

Get Image of the Bone

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 entire Sampling Area fits in one field of view.

Live Image from Microscope with Camera and tracking device:

- 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 of view.

Define Sampling Area

Draw the boundary of the Sampling Area in the Image window:

Irregular Tool

Makes it easy to draw the irregular Sampling Area boundary.
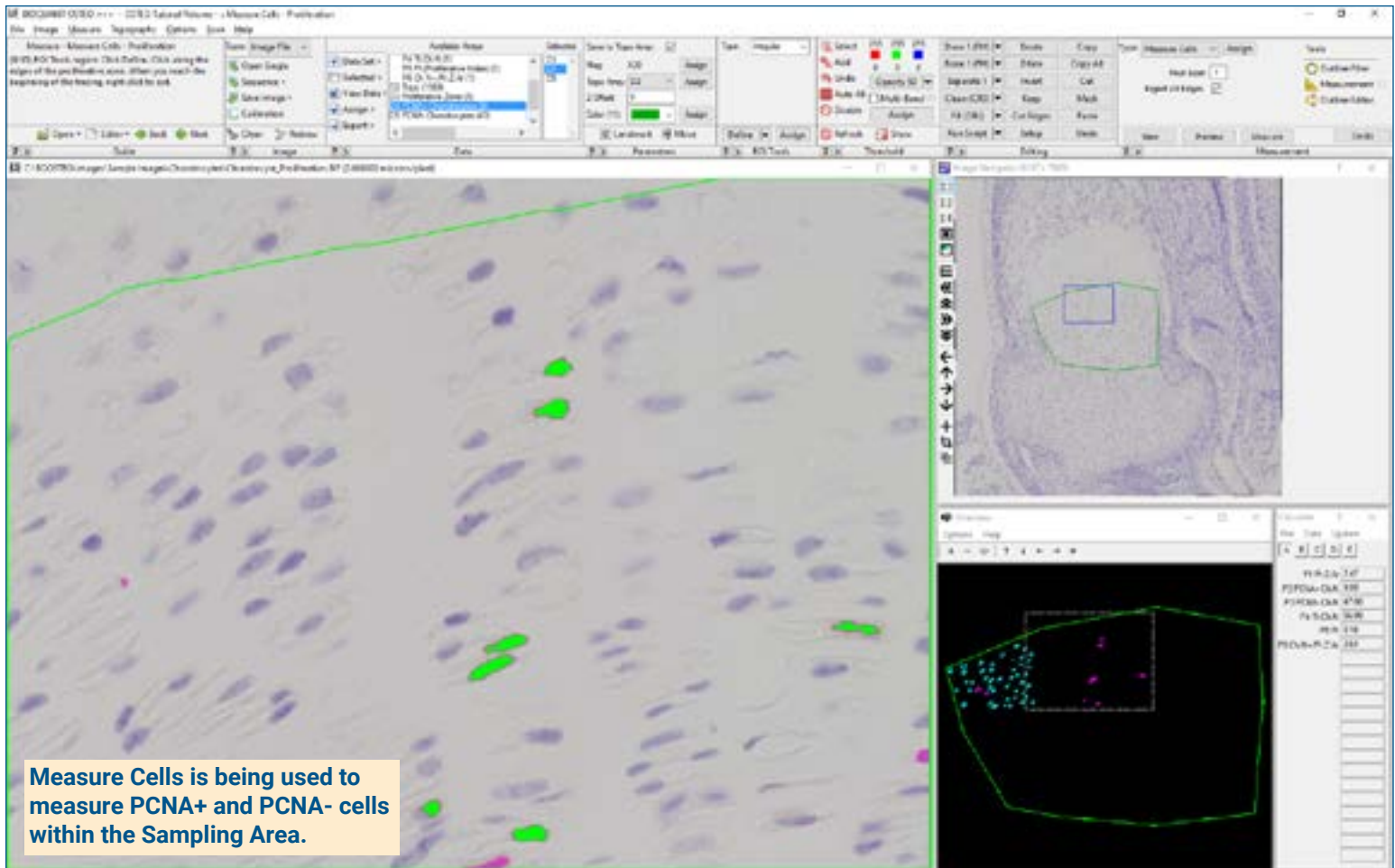
Rectangle Tool

Defines a rectangular Sampling Area with known micron dimensions.

Measure the Sampling Area

Using the **Measure Object** tool, click the Measure button to automatically measure the area of the Sampling Area.

- Only **chondrocytes within the Sampling Area** will be measured.

- The Sampling Area data is used to **normalize** the number of proliferating cells by the size of the zone.

- At higher magnification, the **Sampling Area automatically redraws** as you pan and zoom image at higher magnifications.

- Measurements are **bound by the Sampling Area** at all zoom levels.

BIOQUANT® OSTEO℠

Chondrocyte Proliferation Protocol

Measure Cells is being used to measure PCNA+ and PCNA- cells within the Sampling Area.

Zoom In or Change Objective

Digital Scan in **Large Image Navigator**:

- Zoom in to higher magnification.
- Pan to the upper left corner of the Sampling Area. Auto ROI always keeps you within the Sampling Area.

Live Image with Microscope:

- Change to a higher objective
- Move to the upper left corner of the Sampling Area.
- The Sampling Area tracing redraws on the live image.

Use Measure Cells

Click **Preview** to automatically:

- Threshold the PCNA+ cells.
- Preview outline the PCNA+ cells.
- Cells already measured on previous, overlapping fields of view are **not** preview outlined.
- Cells cut by the region of interest are **not** preview outlined.

Click **Measure** to record PCNA+ data.

Repeat on this field for the PCNA- cells:

Repeat for all fields in the Samping Area.

Proliferation Index and Other Data

As data are collected, BIOQUANT **automatically computes**:

- Pr.Zn.Ar (Proliferation Zone Area)
- PCNA+ Ch.N (PCNA+ Chondrocyte Number)
- PCNA- Ch.N (PCNA- Chondrocyte Number)
- Tt.Ch.N (Total Chondrocyte Number)
- PI (Proliferation Index)
- PCNA+ Ch.N / Pr.Z.Ar

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