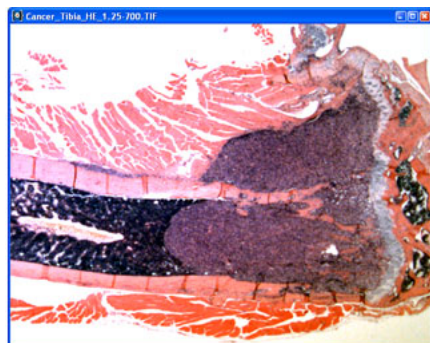


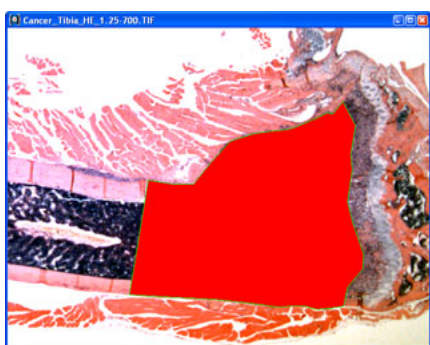
BONE METASTASIS MEASUREMENTS



Optional: Montage Section

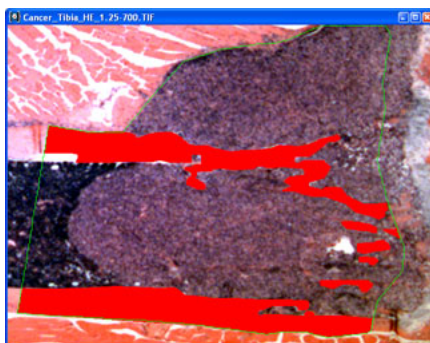
- Capture images at any magnification.
- Montage the images into a single, high res image.
- "Shrink" the montage to a single field of view.
- Calibration data stored in montage.
- Note: If the tissue area shows up in a single field of view, it is not necessary to montage the section.

* Montage requires the Imaging Toolkit and is not required if the Tissue Volume region fits into one field of view.



Step 1: At low mag, set the Tissue Volume

- Define the Tissue Volume area by creating a region of interest a set distance away from the growth plate.
- The TV can be defined as either a Rectangle Tissue Volume of known micron dimensions or as an Irregular Tissue Volume.
- The TV is automatically measured.
- The TV Region of Interest is rotatable to match tissue.



Step 2: Zoom to 4X to measure BV, BS

- Using either Automatic Thresholding or Manual Thresholding, highlight the Bone Area, then measure. For Tumor studies, usually a combination of automatic and manual thresholding is used.
- Measure Bone Volume & Bone Surface automatically.
- Void holes are automatically excluded from BV.
- Artificial edges are automatically excluded from the total Bone Surface (BS) measurement.
- Quiescent Surface is automatically calculated.
- For Tumor / Bone Surface, the user marks the start and end points of the surface on the BS tracing to automatically distribute it to the Tumor / Bone Surface array.



Step 3: Measure the Tumor Volume

- Using either Automatic Thresholding or Manual Thresholding, highlight the Tumor Area, then measure. For Tumor studies, usually a combination of automatic and manual thresholding is used.

Step 4: If Osteoclasts are present, count them

- Change to a higher objective.
- Quickly click on each Osteoclast to count.
- Previously counted cells are marked with an "x" to prevent duplicate counts.

Keeping within the Tissue Volume, repeat for each field of view.

View Dynamic Calculations of over 45 indices as measurements are made.

A topographic map is built as measurements are collected, preventing duplicate measurement.

Use the basic tumor template for tumor volume, bone volume.

Use the complete tumor template for tumor volume with all other trabecular brightfield and darkfield indices.