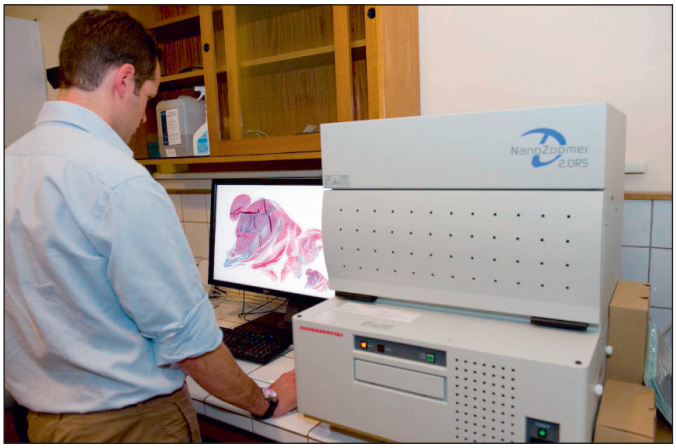
Nanozoomer Application Note #6

Histology and Pathophysiology of bone

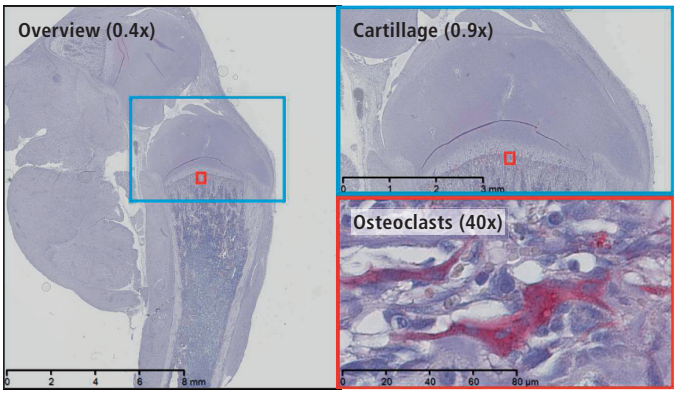


Pathophysiology of Bone Resorption Laboratory, INSERM UMR957, Nantes University, France

In 2011, our research laboratory acquired a digital slide scanner, the Hamamatsu NanoZoomer 2.0-RS. It converts up to 6 glass slides into digital slides by scanning them automatically and quickly at high resolutions (up to x40). The purchase was made possible thanks to INSERM (Plan Cancer 2009-2013).

Bone cancer research

We are interested in the molecular and cellular mechanisms involved in the pathogenesis of bone tumors. Our works cover the basic research, the preclinical and clinical aspects in this field.
First, this slide scanner allows us to more easily archive digital slides without worrying about sample deterioration. This is especially important in animal experimentations where hundreds of slides are typically analyzed at a same time.
Second, digital slides are easy to send to our collaborators in France or other countries for expertise or even diagnosis. Primary bone tumors such as osteosarcoma are rare diseases and the expert pathologists in the field are now questioned by email.
Third, image view, annotation and analysis can be performed "at home" in any computer, especially when using a file storage online. Researchers and students can now count, for example, bone cells (osteoblasts, osteoclasts etc) from anywhere, anytime they want.

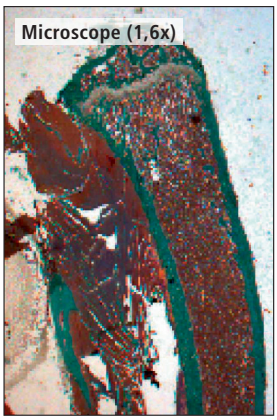


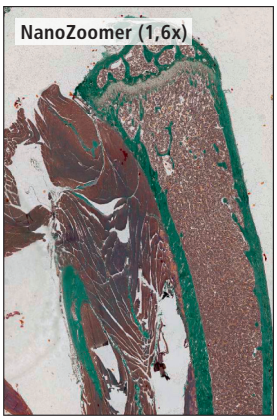
Education, training and popular science

Using the NanoZoomer and its digital slides renders easier to explain bone histology, immunohistochemistry or in situ hybridization to students in an amphitheater, technicians at the bench or even to the public.

Low resolution view

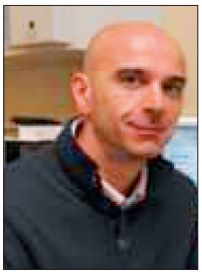
In comparison to standard microscopy, the low resolution images obtained with the NanoZoomer are clearer and brighter, which is especially interesting to visualize a whole organ or tissue such as bone or primary tumor.





Automation of analysis

As an option (not used in the lab), combining the NanoZoomer to NDP. Analyze provides the ability to log on and analyze digital slides from anywhere. Sophisticated APPs (Application Protocol Packages) can be operated locally or via Cloud computing.



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