Tracking Free Drug ex vivo in Tissue

Cisplatin is a platinum-containing anti-cancer drug. These platinum complexes react in vivo, binding to and causing crosslinking of DNA, which ultimately triggers apoptosis (programmed cell death). It is used to treat various types of cancers, including sarcomas, some carcinomas, lymphomas, and germ cell tumors. Researchers are currently investigating means of aerosolization of Cisplatin as a means of targeting lymph node deposition. With the CytoViva Hyperspectral Microscope System, scientists are able to spectrally confirm the presence of Cisplatin in human lymph tissue two hours post inhalation.

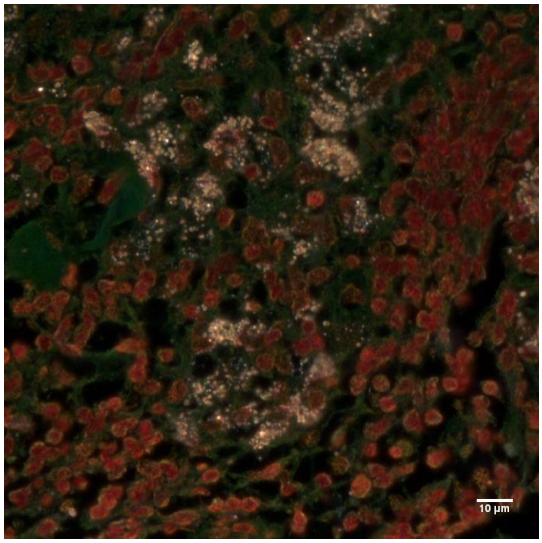

Figure 1. Control Lymph Node Tissue

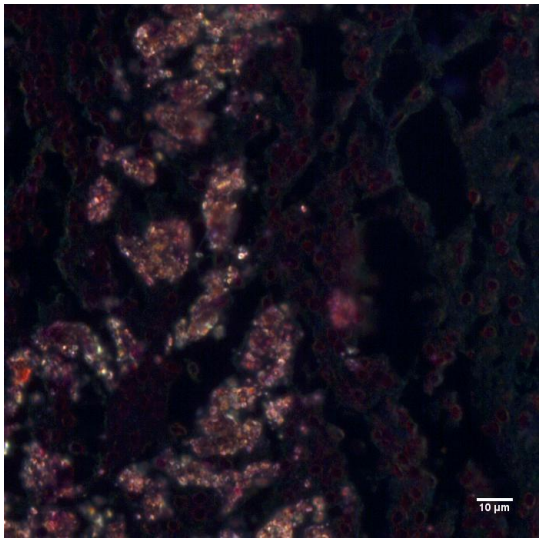

Figure 2. Post Inhalation Lymph Tissue

Current tissue evaluation methods include visual comparison of a control tissue (Figure 1) and an experimental tissue (Figure 2). Upon optical observation, it is impossible to distinguish control tissue from experimental tissue. With the CytoViva Hyperspectral Microscope System, a reference spectral library (Figure 3) for Cisplatin in H&E stained tissue can be created without further sample preparation. This library is used to spectrally confirm the presence of Cisplatin in tissue. The red pixels in Figure 4 indicate the location of Cisplatin in human lymph tissue two hours after an inhalation dosing.

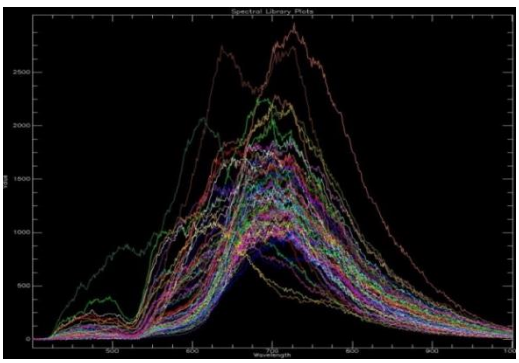

Figure 3. Cisplatin Spectral Library

The CytoViva Hyperspectral Microscope System allows researchers to spectrally confirm and spatially determine the location of drugs in tissue without extensive post processing of the sample.

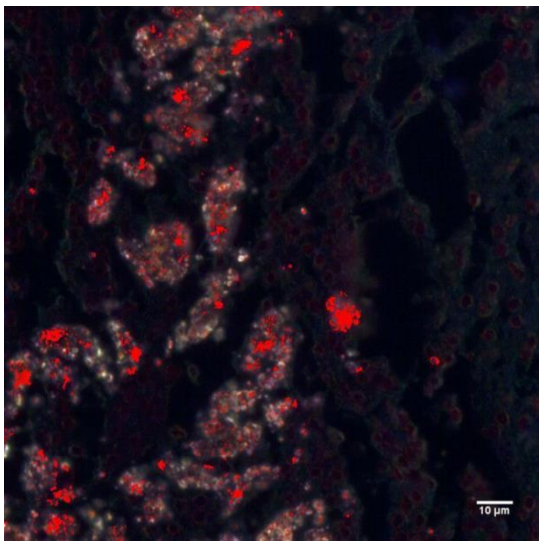

Figure 4. Post Inhalation Lymph Tissue with Cisplatin Mapping

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