

# **Synchrotron infrared microspectroscopic imaging of biological sample**

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The advantage of the synchrotron source is high throughput at high spatial resolution compared to a conventional thermal source. And the infrared output of the synchrotron beam line was fed into a IR microscope as an alternate infrared light. The coupling of infrared microscope and synchrotron source produces the highest signal-to-noise ratio spectrum with the highest spectral resolution from the smallest sample area. The unapertured beam size of the synchrotron infrared radiation is about 10 x 13 micron<sup>2</sup>. The size of aperture is continuous changed to 5 micro by a commercial motorized aperture. IR spectroscopic imaging uses a single element detector associated with an imaging spectrometer to produce an array of spectra over a sample.