

## Confocal microscopy

Confocal microscopy is very useful for obtaining high resolution 3D-images of fluorescent samples, typically biological samples.

The sample is caused to fluoresce by illumination from a laser with a certain excitation wavelength, and the light emitted from the sample is detected. However, a pin-hole prior to the detector allows light only from a narrow focal plane to reach the detector.

In order to archive 3D-images, the focal plane is scanned across the sample. The removal of light from outside the focal plane and the narrow depth of field make it possible to acquire very clean and sharp 3D-images of complex biological samples. It also allows the detection of fluorescent nanoparticles attached to cell surfaces, making it useful in toxicity studies of nanoparticles.

