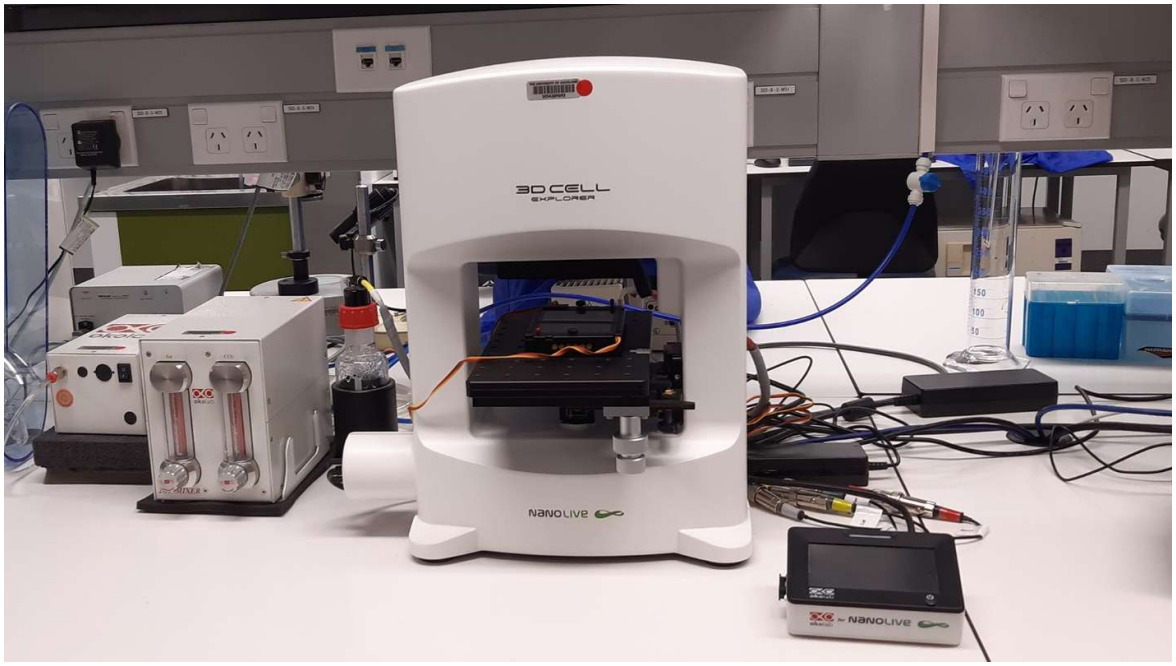
Waipapa Taumata Rau University of Auckland

Nanolive 3D holotomographic microscope



Introduction

This system is specialised for 3D holotomographic imaging, which is label-free imaging although it can also acquire a fluorescence image in 2D. It is primarily used for live imaging of cultured cells at high resolution and can be used for quantitative phase analysis.

Camera

- *CMOS (monochrome), 165 frames/sec at 1024 x 1024 pixels*

Applications

- *3D holotomographic imaging - label-free*
- *Fluorescence imaging - 2D only*
- *Quantitative phase analysis - calibration available*
- *Colour-coding ("painting") based on refractive index*
- *Live cell imaging - up to 96 hours*

Software

- *Steve*

Specifications

- *Objective lens - 60x/0.8 NA objective lens, WD 300 microns*
- *High resolution – lateral 200nm, axial 400nm*
- *Field of view 85 x 85 x 30 microns*
- *Okolab incubation system - temperature and carbon dioxide control, compatible with microfluidics and perfusion systems*
- *Class I laser (520nm) low power*
- *One 3D reconstruction every 2 seconds*
- *Cool LED illumination source for fluorescence*
- *Fluorescence filter set -triple-band – FITC/TRITC/Cy5*

Sample requirements

- *Live or fixed cells grown on coverslips or in ibidi dishes (<30 microns thick)*
- *Tissue sections 5-10 microns thick unless very transparent*
- *Mounting media for tissue sections must be aqueous-based, e.g. Fluoromount, Prolong Gold*
- *Media for live imaging should be low scatter, wide range of media compatible with the system*
- *Samples cannot be dry*

Contact person

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