

# Line-field confocal optical coherence tomography

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## 100-word abstract

A time-domain optical coherence tomography technique is presented for ultrahigh-resolution B-scan imaging in real-time. The technique is based on a two-beam interference microscope with line illumination and line detection, using a supercontinuum laser and a line-scan camera. Multiple (2048) A-scans are acquired in parallel by scanning the sample depth while adjusting the focus. A quasi isotropic spatial resolution of  $1.3 \mu\text{m} \times 1.1 \mu\text{m}$  (lateral  $\times$  axial) is achieved. *In vivo* cellular level resolution imaging of normal and cancerous human skin is demonstrated at 10 frame/s with a penetration depth of  $\sim 500 \mu\text{m}$ .