

Modality	Year	Depth	Contrast
Confocal microscopy <sup>1</sup>	1970s	~0.5 mm	Scattering, fluorescence
Two-photon microscopy <sup>3,4</sup>	1990s	~0.5 mm	Fluorescence
Optical coherence tomography <sup>5</sup>	1990s	~1 mm	Scattering, polarization
Functional photoacoustic microscopy	2005	~3 mm, scalable	Absorption

Supplementary Table 1. Comparison of the modern high-resolution microscopic imaging techniques, whose depth-to-resolution ratios are all greater than 100. Year: years when the technology was developed. Depth: maximum imaging depth. Contrast: image contrast mechanisms.