

Supplementary Table 1. Description of objectives used for two-photon imaging.

Objective	Brief description
Mitutoyo M Plan Apo NIR 20x 0.40 NA, 20mm WD	Objective used for this study.
Mitutoyo M Plan Apo NIR B 20x 0.40 NA, 25.5mm WD	Improved near-IR transmission and larger back aperture. Not commercially available at time of study initiation. Superior sample brightness through prism.
Mitutoyo M Plan Apo NIR LCD 20x 0.40 NA, 20mm WD	Corrected for imaging through 1.1mm thick glass. Not commercially available at time of study initiation. Superior sample brightness through prism.
Edmund Optics HR 20x 0.60 NA 13mm WD	Superior sample sharpness but was not used due to concerns about shorter working distance.
Nikon L Plan SLWD 20x 0.35 NA 24mm WD	Objective used in (Lecoq et al, 2014). Inferior sample brightness through prism, but very small and lightweight.