































registration. The instrument is capable of achieving an imaging resolution of up to 1.5  $\mu\text{m}$  (axial)  $\times$  0.4  $\mu\text{m}$  (transverse), and a spectroscopic resolution of up to 13  $\mu\text{m}$  (axial)  $\times$  0.79  $\mu\text{m}$  (transverse). The tradeoff between axial resolution and SNR as a function of CRS detection fiber size resulted in the use of a 50  $\mu\text{m}$  detection fiber based on the desired application to *in vivo* analysis of the skin. Co-registration of CRS and CM was verified to within 5  $\mu\text{m}$ . The performance of the probe was then demonstrated by performing *in vivo* measurements from different layers of the skin, including the stratum corneum, stratum granulosum, and dermis as well as micro-structures such as sebaceous glands, with confocal reflectance imaging while providing chemical differences of tissue through Raman spectroscopy. The combined system can provide beneficial data collection for diagnostic purposes.

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