

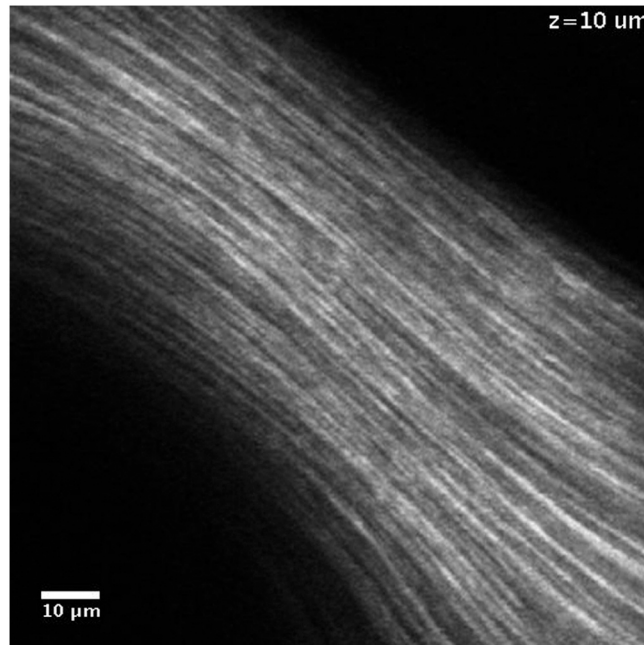
# Supporting Information

Rivera et al. 10.1073/pnas.1114746108

## SI Text

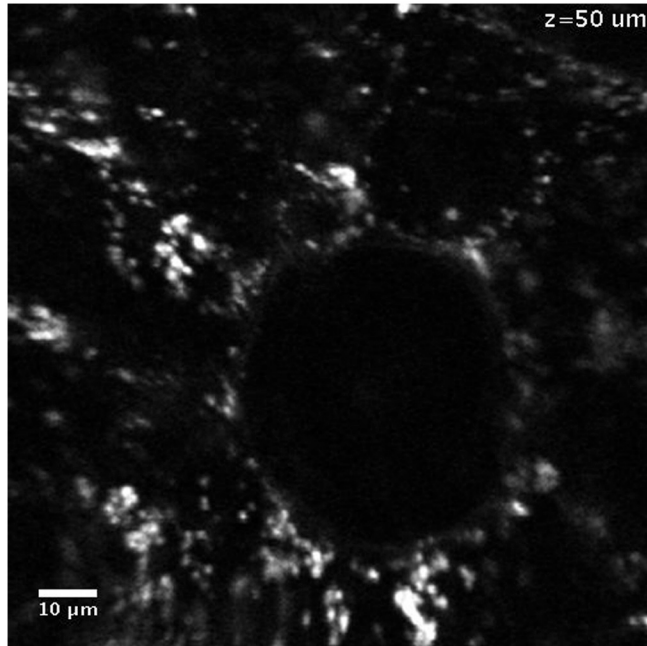
**Gradient-Index (GRIN) Lens Working Distance Characterization.** We note that although the working distance quoted by GRINTECH for the GRIN assembly is 200  $\mu\text{m}$ , we measured a working distance of approximately 135  $\mu\text{m}$ , after carefully aligning the separation distance between the back aperture of the lens and the excitation fiber, in order to maximize the epi-collected signal while minimizing the axial resolution. The working distance was

measured by initially touching a Rhodamine B thin film to the front of the GRIN lens, through the aid of a high-magnification dissection microscope, in order to set our zero position, and then stepping the thin film away from the GRIN lens until a maximum collection signal was reached. This maximum signal was found to be approximately 135  $\mu\text{m}$  from the front of the GRIN lens.



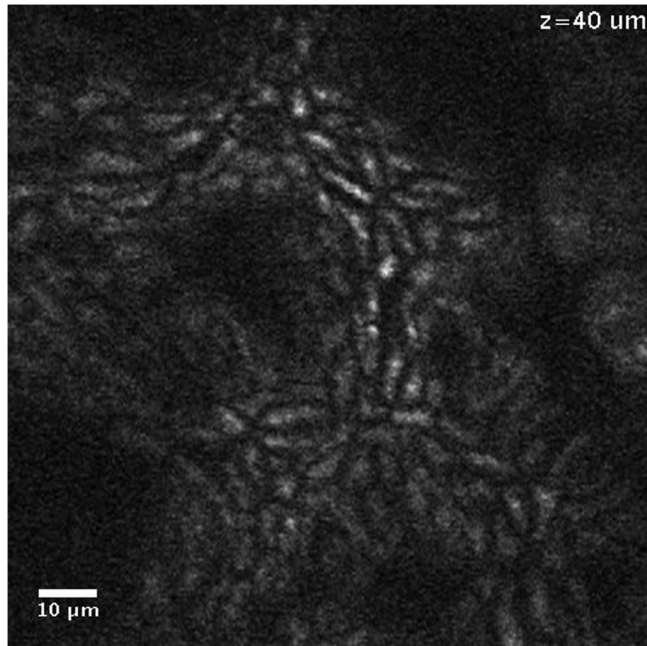
**Movie S1.** Unstained image as a function of depth. Mouse tail. 5- $\mu\text{m}$  steps; 10 frames averaged.

[Movie S1 \(MOV\)](#)



**Movie S2.** Unstained image as a function of depth. Mouse lung. 5-um steps; 10 frames averaged.

[Movie S2](#)



**Movie S3.** Unstained image as a function of depth. Mouse colon. 5-um steps; 10 frames averaged.

[Movie S3](#)