The Effect of the Endothelial Cell Cortex on Atomic Force Microscopy Measurements

R. Vargas-Pinto,[†] H. Gong,[‡] A. Vahabikashi,[†] and M. Johnson[§]*

[†]Biomedical Engineering Department, Northwestern University, Evanston, Illinois; [‡]Department of Ophthalmology, Boston University School of Medicine, Boston, Massachusetts; and [§]Departments of Biomedical Engineering, Mechanical Engineering and Ophthalmology, Northwestern University, Evanston, Illinois

Effect of Cell Cortex on AFM Measurements

Vargas-Pinto et al.

Submitted August 6, 2012, and accepted for publication May 13, 2013.

*Correspondence: m-johnson2@northwestern.edu

Supporting Material

The Effect of the Endothelial Cell Cortex on Atomic Force Microscopy Measurements

Video S1: Schlemm's canal cell treated with Latrunculin-A. SIM images are taken at 1 image/minute for 30 minutes. The cell cortex is seen to be depolymerized in sequential fashion, followed then by depolymerization of the stress fibers of the internal cytoskeleton of the cell. (235 kb). The white scale bar is 2 μ m in length. The apparent banding pattern on the actin fibers and background is an artifact of the imaging process.

Figure S1: Schematic of mid-plane of cell (roughly half way between apical and basal surface of cell) showing regions where cortex lateral thickness measurements were made. A field of view was chosen within the measurement area. The red lines show where measurements were made on one cell. We avoided measurements on the leading and trailing edges of the cell and on the apical and basal surfaces.

