

**Supplemental Table ST2:** Comparison of structural parameters between control and glaucoma lamina cribrosa.

Tissue Component	Structural Parameter	Control (n=9)	Glaucoma (n=16)	p value
GFAP in pores	<b>Area fraction (GFAP area/mask area)</b>	<b>0.51 ± 0.04</b>	<b>0.48 ± 0.03</b>	<b>0.010</b>
	Average process width (um)	1.60 ± 0.10	1.63 ± 0.09	0.42
GFAP overall	Area fraction (GFAP area/mask area)	0.42 ± 0.04	0.41 ± 0.03	0.55
	Average process width (um)	1.72 ± 0.11	1.71 ± 0.10	0.91
Actin in pores	<b>Area fraction (actin area/mask area)</b>	<b>0.48 ± 0.03</b>	<b>0.44 ± 0.04</b>	<b>0.074</b>
	Average process width (um)	1.05 ± 0.03	1.07 ± 0.08	0.28
Actin overall	Area fraction (actin area/mask area)	0.41 ± 0.03	0.40 ± 0.03	0.58
	Average process width (um)	1.08 ± 0.03	1.08 ± 0.08	0.76
Beam structure (SHG)	Area fraction (SHG area/mask area)	0.46 ± 0.11	0.41 ± 0.07	0.21
	Average beam width (um)	11.62 ± 2.81	10.32 ± 1.90	0.47
	Mean area of pores (um <sup>2</sup> )	1438 ± 491	1321 ± 645	0.84
Nuclei overall	Median of nuclear area (um <sup>2</sup> )	30.41 ± 8.15	29.06 ± 5.53	0.31
	<b>Median aspect ratio of nuclei</b>	<b>2.04 ± 0.20</b>	<b>1.88 ± 0.13</b>	<b>0.017</b>
	Count*10 <sup>3</sup> /mask area (#/um <sup>2</sup> )	1.37 ± 0.26	1.42 ± 0.24	0.69
Nuclei in pores	Median of nuclear area (um <sup>2</sup> )	29.59 ± 7.51	27.44 ± 4.31	0.21
	<b>Median aspect ratio of nuclei</b>	<b>1.85 ± 0.22</b>	<b>1.72 ± 0.12</b>	<b>0.017</b>
	Count*10 <sup>3</sup> /mask area (#/um <sup>2</sup> )	1.10 ± 0.37	1.14 ± 0.43	0.79
	Area percentage of nuclei in pores	0.36 ± 0.14	0.40 ± 0.16	0.78
Nuclei on beams	Median of nuclear area (um <sup>2</sup> )	28.00 ± 7.46	27.37 ± 5.79	0.42
	<b>Median aspect ratio of nuclei</b>	<b>2.16 ± 0.14</b>	<b>2.03 ± 0.130</b>	<b>0.049</b>
	Count*10 <sup>3</sup> /mask area (#/um <sup>2</sup> )	1.77 ± 0.40	1.89 ± 0.48	0.73
Axon Compartments	Number of axonal compartments	4,857 ± 737	4,320 ± 1,153	0.24
	<b>Median of axonal area (um<sup>2</sup>)</b>	<b>0.64 ± 0.04</b>	<b>0.58 ± 0.07</b>	<b>0.050</b>

\*P values from multivariable linear mixed models, with significant examples marked in bold. Models

included adjustments for inclusion of 2 eyes of some persons, for inclusion of data from 3 serial sections of each eye, for central versus peripheral zones, and for age, race, and sex.