

**Supplementary Table 1.**  
**Confidence intervals for raw data distributions**

<b>Figure Panel</b>	<b>Parameter assessed</b>	<b>Lower 95% CI of mean</b>	<b>Upper 95% CI of mean</b>
Figure 1I	Average amplitude of Ca <sup>2+</sup> transients per myelin sheath	0.9145	1.707
Figure 1J	Average duration of Ca <sup>2+</sup> transients per myelin sheath	24.72	29.29
Figure 1K	Correlation between Ca <sup>2+</sup> transient amplitude and duration	0.06951	0.25
Figure 2B	Average amplitude of Ca <sup>2+</sup> transients in stabilised sheaths	0.7147	1.088
	Average amplitude of Ca <sup>2+</sup> transients in sheaths retracted	1.342	6.584
Figure 2C	Average duration of Ca <sup>2+</sup> transients in stabilised sheaths	23.6	28.55
	Average duration of Ca <sup>2+</sup> transients in sheaths retracted	27.24	38.83
Figure 2H	Myelin sheath number per oligodendrocyte (DMSO)	12.81	15.97
	Myelin sheath number per oligodendrocyte (PD150606)	16.61	20.78
Figure 2I	Number of sheaths retracted/ hour (DMSO)	0.2668	0.4163
	Number of sheaths retracted/ hour (PD150606)	0.191	0.2807
Figure 2J	Myelin sheath number per oligodendrocyte (mbp:meGFP)	13.42	18.12
	Myelin sheath number per oligodendrocyte (mbp:meGFP_calpastatin)	18.26	22.7
Figure 3C	Speed of growth of sheaths exhibiting 0 transient/h	-0.1137	0.04157
	Speed of growth of sheaths exhibiting <1 transient/h	0.0177	0.215
	Speed of growth of sheaths exhibiting 1-2 transients/h	0.07212	0.2444
	Speed of growth of sheaths exhibiting 2-3 transients/h	0.07062	0.3671
	Speed of growth of sheaths exhibiting >3 transients/h	0.281	0.6197
Figure 3D	Correlation between myelin sheath growth rate and Ca <sup>2+</sup> transient frequency	0.2487	0.4672
Figure 3E	Linear regression analyses of		

	change in myelin sheath length after Ca <sup>2+</sup> transients	0.004247	0.007626
Supplementary Figure 1D	Duration of individual Ca <sup>2+</sup> in myelin sheaths	17.35	29.05
Supplementary Figure 5D	Myelin sheath number per oligodendrocyte mbp:meGFP	14.73	18.45
	Myelin sheath number per oligodendrocyte mbp:meGFP and <i>cast</i> mRNA	18.05	21.48
Supplementary Figure 6A	Correlation between myelin sheath growth rate and Ca <sup>2+</sup> transient amplitude	-0.2737	0.02997
Supplementary Figure 6B	Correlation between myelin sheath growth rate and Ca <sup>2+</sup> transient duration	-0.129	0.1792