

Table S3: Statistical analysis of the organelle velocity ( $\mu\text{m}/\text{sec}$ )

Organelle	Treatment	N <sup>1</sup>	Scheffe group	Mean	S.D.	Median
Golgi	EV	407	A	1.10745079	0.98239915	0.832033
	VIII-1	433	B	0.88687586	0.82170794	0.729308
	XI-F	477	B	0.88137149	0.85450231	0.655759
	XI-2	521	C	0.75788657	0.80855668	0.525522
	XI-K	426	D	0.12289702	0.08816986	0.096349
	XI-K/GTD	160	D	0.12270448	0.04482545	0.122771
	ds GFP	433	A	1.25108365	1.08785701	1.024490
	ds XI-F	447	B	0.89318264	0.82574608	0.684305
	ds XI-2	432	C	0.74745416	0.76158926	0.537068
	ds XI-K	455	D	0.22154252	0.15714155	0.170613
Mitochondria	EV	420	A	1.39404700	1.00946672	1.194595
	XI-2	497	B	1.19976749	0.80925845	1.058070
	XI-F	423	B	1.12067894	0.48860786	1.149690
	VIII-1	413	B	1.32658512	1.27790238	1.026560
	XI-K	466	C	0.16771135	0.10000982	0.152780
	EV	471	A	1.39115124	0.97862807	1.229780
	ds XI-F	432	B	0.98513317	0.88020967	0.800495
	ds XI-2	444	B	0.77900670	0.45874877	0.740596
	ds XI-K	421	C	0.08775638	0.04359263	0.083750
	Peroxisomes	EV	423	A	0.88137577	1.13296050
VIII-1		420	B	0.47964723	0.54628997	0.346998
XI-2		430	C	0.28441717	0.38274331	0.120888
XI-F		412	C	0.35746544	0.56543034	0.144518
XI-K		455	D	0.06252615	0.04297281	0.050586
ds GFP		429	A	0.93979875	1.04039216	0.535443
ds XI-F		435	B	0.55206598	0.51482332	0.383163
ds XI-2		423	B	0.59234001	0.73792630	0.327721
ds XI-K		433	C	0.19497290	0.16209252	0.149575

<sup>1</sup>Number of analyzed organelles.