

Table 1. Mitochondrial numbers and concentrations in germline cysts

Stage (number of cells)	Mitochondrial diameter (nm)*		Number of mitochondria/cyst [†]	Number of mitochondria/cell	Cyst cytoplasmic volume (μm^3)	Cell cytoplasmic volume [‡] (μm^3)	Volume/mitochondrion (μm^3)	Mitochondrial volume [§] /cell (μm^3)
	Major axis	Minor axis						
Germline stem cell (10)	n.d.	n.d.	140±32	140	1600	1600±520	0.20	28±12
Cystoblast (10)	n.d.	n.d.	150±23	150	1600	1600±630	0.27	40±17
Two-cell cyst (16)	n.d.	n.d.	280±46	140	2600	1300±110	0.096	27±17
Four-cell cyst (24)	430±43	340±36	410±72	100	3800	950±130	0.26	26
Eight-cell cyst (25)	460±30	380±29	810±31	100	4500	560±110	0.30	29
16-cell cyst (25)	550±36	460±34	1100±43	69	5800	360±99	0.53	36

*Mitochondrial diameters were measured by applying NIH image software to confocal images of individual mitochondria from germlaria stained with ATP synthase.

[†]Mitochondrial number was determined using ATP synthase staining and confocal microscopy.

[‡]Cell cytoplasmic volume was determined by measuring major and minor axes, as outlined by phalloidin staining, and then subtracting the nuclear volume, as determined by either the region without Vasa staining or enclosed by Lamin staining. Calculations assumed the structures were ellipsoids. The cell radii were very similar to those we measured in our transmission electron micrographs. Cyst cytoplasmic volume was determined by extrapolation for any unmeasured cells.

[§]Mitochondrial volume was measured for germline stem cells, cystoblasts and two-cell cysts using confocal microscopy of germlaria stained with ATP synthase and using NIH Image software. Total pixel volume was determined at the highest setting where labeling remained confined to mitochondria. For four-, eight- and 16-cell cysts, which contain ellipsoidal mitochondria, volume was calculated from the mitochondrial diameters.

Values without standard errors are calculated from the other data.