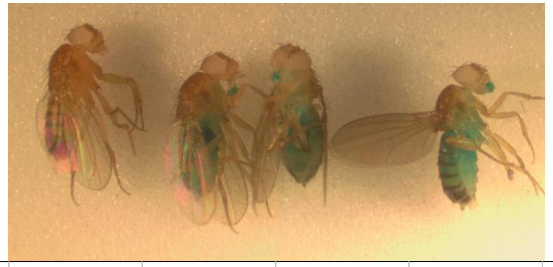
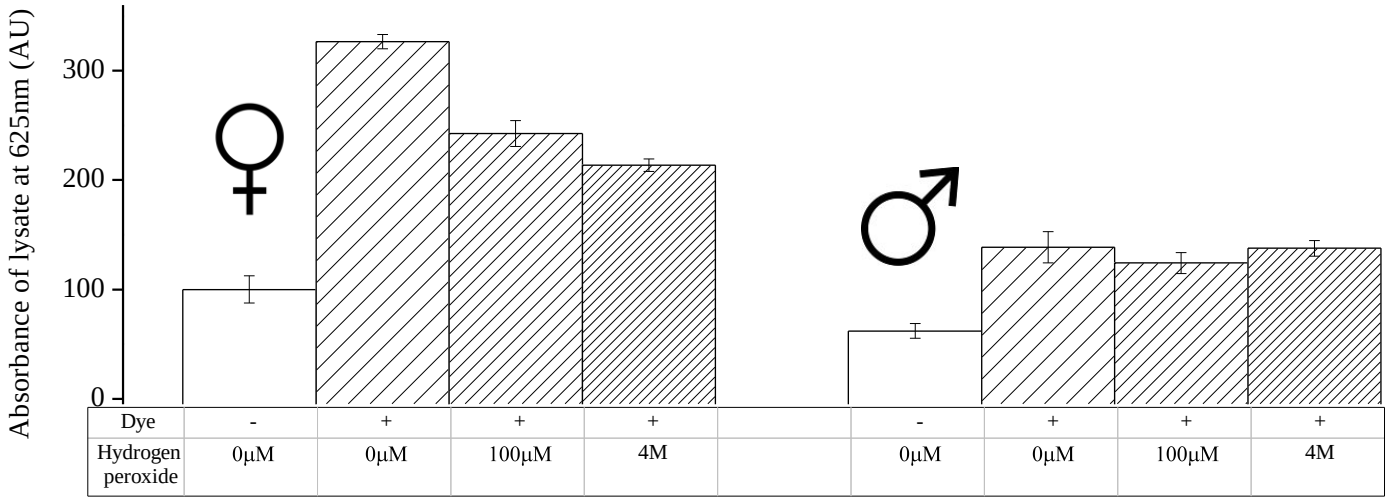
A



Dye	-	+	+	+		-	+	+	+
Hydrogen peroxide	0μM	0μM	100μM	4M		0μM	0μM	100μM	4M

B



Dye	-	+	+	+		-	+	+	+
Hydrogen peroxide	0μM	0μM	100μM	4M		0μM	0μM	100μM	4M

Fig. S1: Uptake of sucrose/H_2O_2 solution by *Drosophila melanogaster*. **A.** Female and male Drosophila ingest a solution of sucrose, and various doses of H_2O_2 over the 8 h H_2O_2 pretreatment, though females ingest significantly more. In this background experiment w[1118] flies were placed on a ½ Kim-wipe© soaked in a solution of 5% sucrose + 0μM, 100μM or 4.4M H_2O_2 + 10% blue food color (Amerifoods, Los Angeles, CA, USA) for 8 h. Flies were then visualized under a stereoscope. Visible dye staining is observed around the gut and mouth of all flies treated with the food dye. **B.** Five flies from each of the treatment conditions in **A** were suspended in 300μl of DI water then lysed using an electronic pestle. After this, the samples was centrifuged to removed un-lysed particles. The supernatants were studied in triplicate on 96 well plates and absorbance at a wavelength of 625nm was measured.

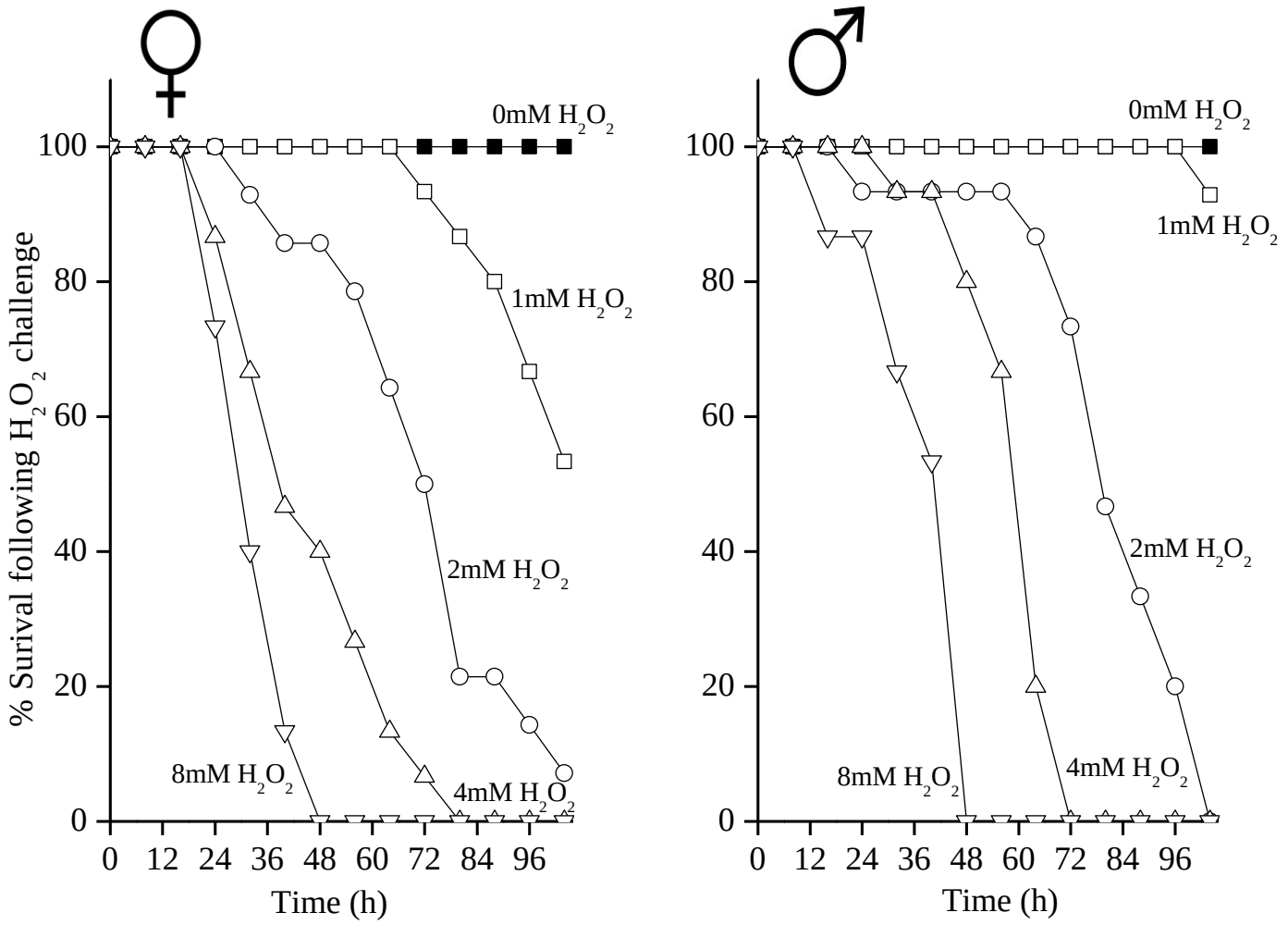


Fig. S2: Survival of *Drosophila melanogaster* following H_2O_2 Challenge. H_2O_2 challenge causes a decline in Drosophila survival which is independent of incubation on 5% sucrose. Samples of 15 female or male w[1118] flies were placed on a ½ Kim-wipe© soaked in a solution of 5% sucrose + 0M, 1M, 2M, 4M or 8M H_2O_2. Survival was then scored every 8 h over a total period of 104 h, which was the length of the longest survival assay run in the paper.