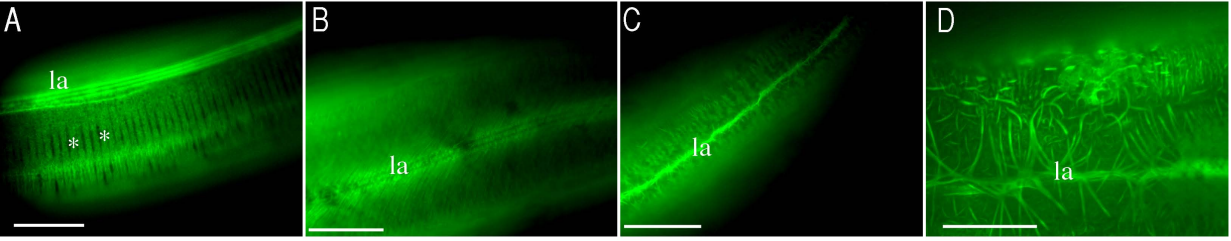
Supplemental Figures

Figure 1. **The haem peroxidase COL-19::GFP screen and resulting disruption patterns.** The wormbase database was searched for transcripts that encoded animal haem peroxidase domains with associated body morphology defects based on published RNAi screens (Kamath *et al* 2003, *Nature* **421**, 231-237). RNAi feeding clones corresponding to the five selected peroxidases listed were applied to the COL-19::GFP transgene expressing strain and these were viewed for disruption of the collagen GFP expression pattern. A, represents the regular circumferential annular ring (*) and lateral alae (la) staining pattern, that is denoted along the entire adult cuticle of wild type animals. B and C denote the amorphous annular ring pattern and disrupted lateral alae pattern following feeding with zk430.8 (*mlt-7*). D, depicts the severe disruption of lateral alae and annuli following f56c11.1 (*bli-3*) RNAi feeding.

Figure 2. **Hypodermal marker strains indicate a slight disruption to the seam cell morphology of the *mlt-7* Dpy mutants.** The seam cell nuclear marker JR667 and seam cell boundary marker MH27 have been used together to highlight seam cell defects in collagen biosynthetic enzyme mutants (Eschenlauer *et al* 2003, *J. Biol. Chem.* **278**, 4227-4237). An identical study was performed here to show that seam cell nuclei are primarily regularly spaced (A and B) and the associated boundaries are mainly well defined (C and D). A, is an adult *mlt-7* Dpy mutant transformed with the JR667 seam cell nuclear marker. B, epifluorescence image of A, depicting regularly-spaced seam cell, with a small cluster of aggregated nuclei (arrowed). In wild type worms this represents a continuous equally spaced line of nuclei (Eschenlauer *et al* 2003, *J. Biol. Chem.* **278**, 4227-4237). C, represent the tail region of an adult *mlt-7* Dpy mutant. D, epifluorescent image of animal in C, probed with MH27 seam cell boundary marker, depicting small area of seam cell disruption (arrowed). The mutant is also co-stained with the DPY-7 antibody. In wild type animals this marker highlights two parallel, uninterrupted cell boundaries (Eschenlauer *et al* 2003, *J. Biol. Chem.* **278**, 4227-4237).

Supplemental Figure 1



Animal Haem Peroxidases		
Gene/identity	**Gross morphological**	**COL-19::GFP pattern**
f56c11.1 (Bli-3)	Bli, Mlt	Multiple alae, branched alae
f53g12.3	Bli, Mlt	Multiple alae, branched alae
zk430.8 (Mlt-7)	Bli, Dpy, Mlt	Amorphous
c16c8.2	Dpy	WT
t06d8.10	Weak Dpy	WT

Supplemental Figure 2