



**Supplementary information, Figure S9.** (A-G) *Ex vivo* calibration of Hyper  $F_{488}/F_{405}$  ratio as a function of ambient  $H_2O_2$  concentration. *Tg(myI7:Hyper)* transgenic adult hearts were incubated with different concentrations of  $H_2O_2$  (B-G) or without  $H_2O_2$  (A). This calibration was shown as a line figure in Figure 1H.  $n=3$ . (H-L) A sham *Tg(myI7:hyper)* heart was labeled with Redoxsensor cc-1. Images show Hyper signals at 488 (H) and 405 nm (I) and Redoxsensor cc-1 signals at 555 nm excitation (J), and the merging of H and J (K). (L) Show the Hyper ratio image for panels H and I. (M) Show the Hyper ratio image for panels L and M in Figure 1.