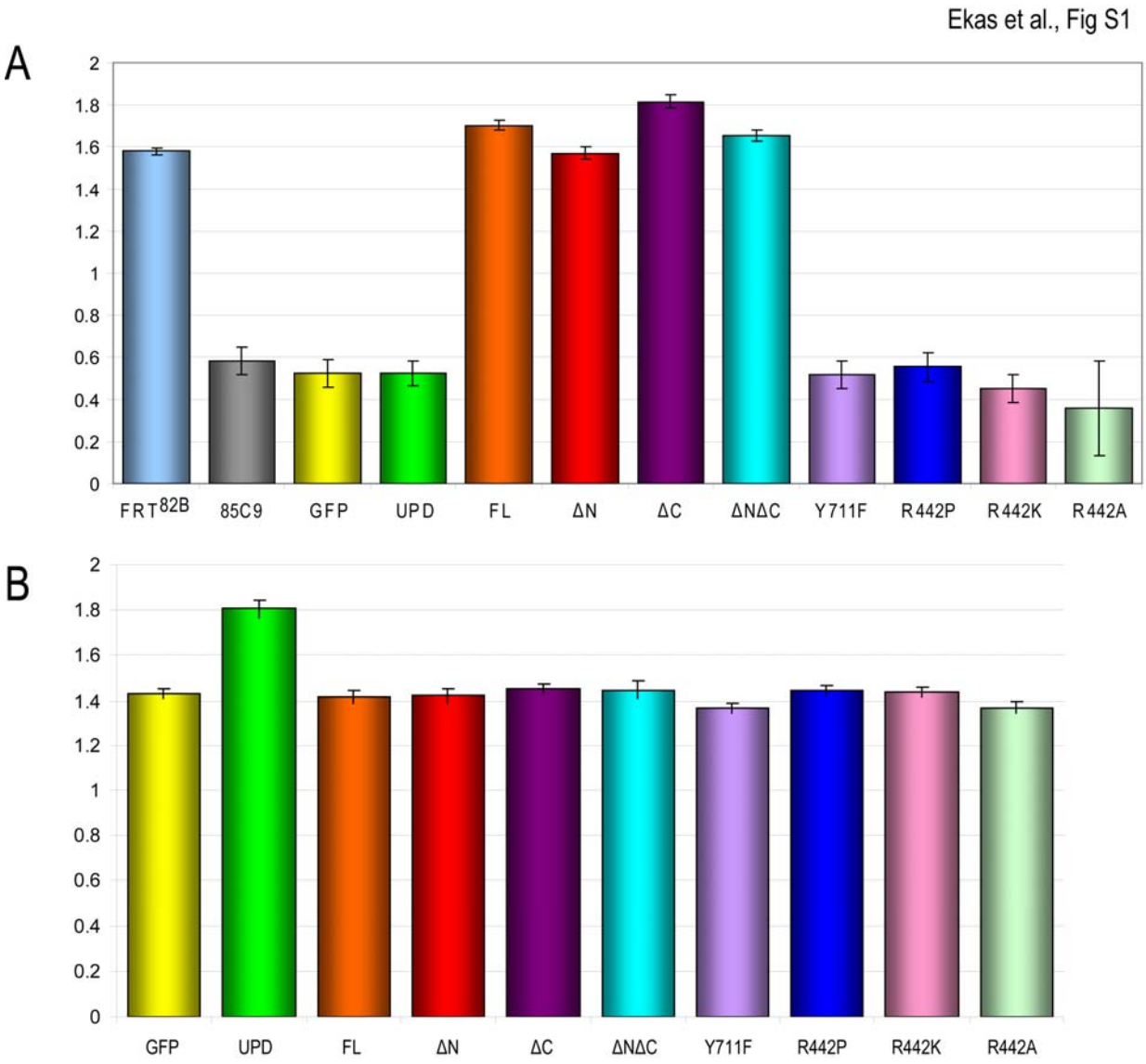

Figure S1. Quantification of *Stat92E* eye rescue assay and overexpression of *Stat92E* transgenes in a wild type eye. (A) Quantification of Stat92E variants in the $Stat92E^{85C9}$ rescue assay. Area of adult eyes in arbitrary units as measured by Image J. N=20, females only. (B) Overexpression of *Stat92E* transgenes in a wild type background using *ey-Gal4* has no effect on the size of the adult eye. Conversely, overexpression of *upd* using *ey-Gal4* results in a significant increase in the size of the adult eye (green bar). N=20, females only.

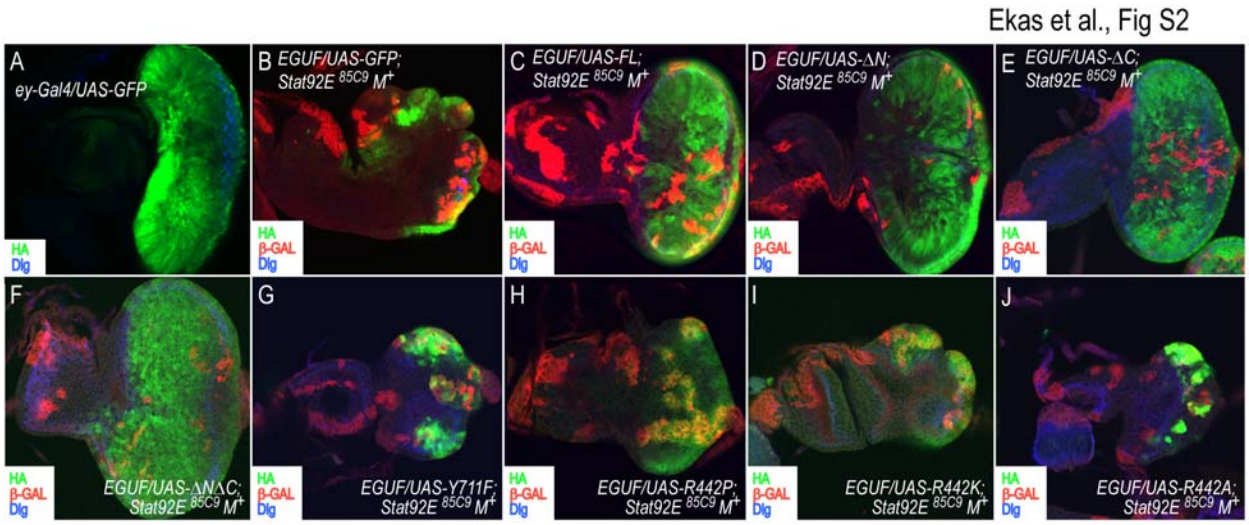

Figure S2. *Stat92E* transgene expression *in vivo*. (A-J) HA staining of *Stat92E* transgenes. (A) A third instar eye disc in which *ey-GAL4* drives expression of *UAS-GFP* in a wild type background. (B-J) Third instar eye discs in which $Stat92E^{85C9}$ M^{+} tissue was induced by *EGUF* and in which *UAS-3HA-Stat92E* transgenes were mis-expressed throughout the eye disc by the *ey-Gal4* insertion on the *EGUF* chromosome: *UAS-GFP* (B), $Stat92E^{FL}$ (C), $Stat92E^{\Delta N}$ (D), $Stat92E^{\Delta C}$ (E), $Stat92E^{\Delta N\Delta C}$ (F), $Stat92E^{Y711F}$ (G), $Stat92E^{R442P}$ (H), $Stat92E^{R442K}$ (I), and $Stat92E^{R442A}$ (J) in a $Stat92E^{85C9}M^{+}$ background. $Stat92E^{85C9}$ M^{+} tissue is marked by the absence of β-GAL (anti-β-GAL (red)), anti-HA (green), Dlg (blue). HA is expressed ubiquitously when transgenes that rescue the *Stat92E* mutant phenotype are expressed in the eye disc (C-F). Transgenes that do not rescue are not expressed ubiquitously (B,G-J).