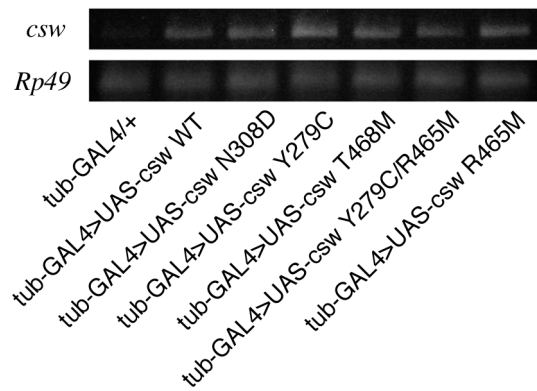
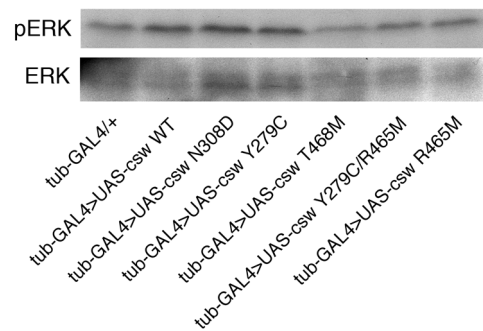


**Supplementary Figure 1.** RT-PCR analysis of *csw* expression in developing larvae.

*Rp49* gene expression was used as control. Similar levels of *csw* expression were induced in wild type and Noonan syndrome-transgene expressing larvae by GAL4. Total RNA from *tub-GAL4/+* larvae was used as a negative control.



**Supplementary Figure 2.** MAPK activation in ubiquitous LEOPARD and Noonan syndrome-transgene expressing larvae. The expression of dpERK is not increased in the phosphatase-dead mutant transgenic larvae, comparable to the wild type larvae showing a minimal level of dpERK.



## Supplementary Table

### Relative copy number of *csw* transcript with transgene expression using *tub-GAL4*

<i>csw</i> mutation	Relative copy number $\pm$ S.D.	P value vs <i>UAS-csw</i> <sup>WT</sup>
<i>tub-GAL4/+</i>	ND	
<i>tub-GAL4&gt; UAS-csw</i> <sup>WT</sup>	12.14 $\pm$ 1.90	
<i>tub-GAL4&gt; UAS-csw</i> <sup>N308D</sup>	14.39 $\pm$ 1.52	0.321
<i>tub-GAL4&gt; UAS-csw</i> <sup>Y279C</sup>	14.75 $\pm$ 2.82	0.344
<i>tub-GAL4&gt; UAS-csw</i> <sup>T468M</sup>	39.25 $\pm$ 5.81	0.025
<i>tub-GAL4&gt; UAS-</i> <i>csw</i> <sup>Y279C/R465M</sup>	20.01 $\pm$ 6.22	0.196
<i>tub-GAL4&gt; UAS-csw</i> <sup>R465M</sup>	9.00 $\pm$ 0.53	0.062