

**Table S4.** Results of variance component estimation using ASReml for startle response. Different linear models for individual trait records were investigated.

Startle Response	$\hat{\sigma}_{\text{line}}^2$	$\hat{\sigma}_{\text{sex*line}}^2$	$\hat{\sigma}_{\text{rep}(\text{sex*line})}^{2,1}$	$\hat{\sigma}_g^2$	$\hat{\sigma}_{g \times g}^2$	$\hat{\sigma}_{\text{residual}}^2$	$\ln(L)^2$	$\hat{H}_{\text{Model 1}}^{2,3}$	$\hat{h}_{\text{Model 2/3}}^{2,4}$
Model 1	33.49 <sup>5</sup> (4.38)	0.00	17.81 (1.26)	16.45 (2.17)	25.70 (0.33)	-27320.93	0.57 (0.03)	0.39 (0.03)	
Model 2	0.00	0.00	17.79 (1.26)	12.98 (11.47)	25.70 (0.33)	-27317.45** <sup>6</sup>	0.57 (0.03)	0.32 (0.04)	
Model 3	0.00	0.00	17.78 (1.26)	11.89 (2.34)	25.70 (0.33)	-27317.41	0.57 (0.03)	0.32 (0.04)	
Model 1 f <sup>7</sup>	24.07 (4.72)		27.96 (3.33)	11.89 (2.34)	25.26 (0.46)	-13746.53	0.49 (0.05)		
Model 2 f	0.00		27.61 (3.25)	11.89 (2.34)	25.26 (0.46)	-13743.71*	0.51 (0.04)	0.32 (0.04)	
Model 3 f	0.00		27.61 (3.25)	11.89 (2.34)	25.26 (0.46)	-13743.71	0.51 (0.04)	0.32 (0.04)	
Model 1 m <sup>8</sup>	27.26 (4.74)		23.23 (2.81)	13.34 (2.35)	26.13 (0.48)	-13682.01	0.51 (0.04)	0.34 (0.04)	
Model 2 m	0.00		23.03 (2.77)	13.34 (2.35)	26.13 (0.48)	-13678.87*	0.51 (0.04)	0.34 (0.04)	
Model 3 m	0.00		23.03 (2.77)	13.34 (2.35)	26.13 (0.48)	-13678.87	0.51 (0.04)	0.34 (0.04)	

<sup>1</sup> or “rep(line)” if factor sex is not included

<sup>2</sup> loglikelihood

<sup>3</sup> broad-sense heritability, standard errors in parentheses

<sup>4</sup> narrow-sense heritability, standard errors in parentheses

<sup>5</sup> estimated variance components, standard errors in parentheses

<sup>6</sup> The superscripts \* and \*\* indicate the 5%- and 1%-significance of Model 2 compared to the Model 1 without  $g$ -component based on a likelihood ratio test.

<sup>7</sup> Only measurements of female *Drosophila* were used.

<sup>8</sup> Only measurements of male *Drosophila* were used.