

Figure S1

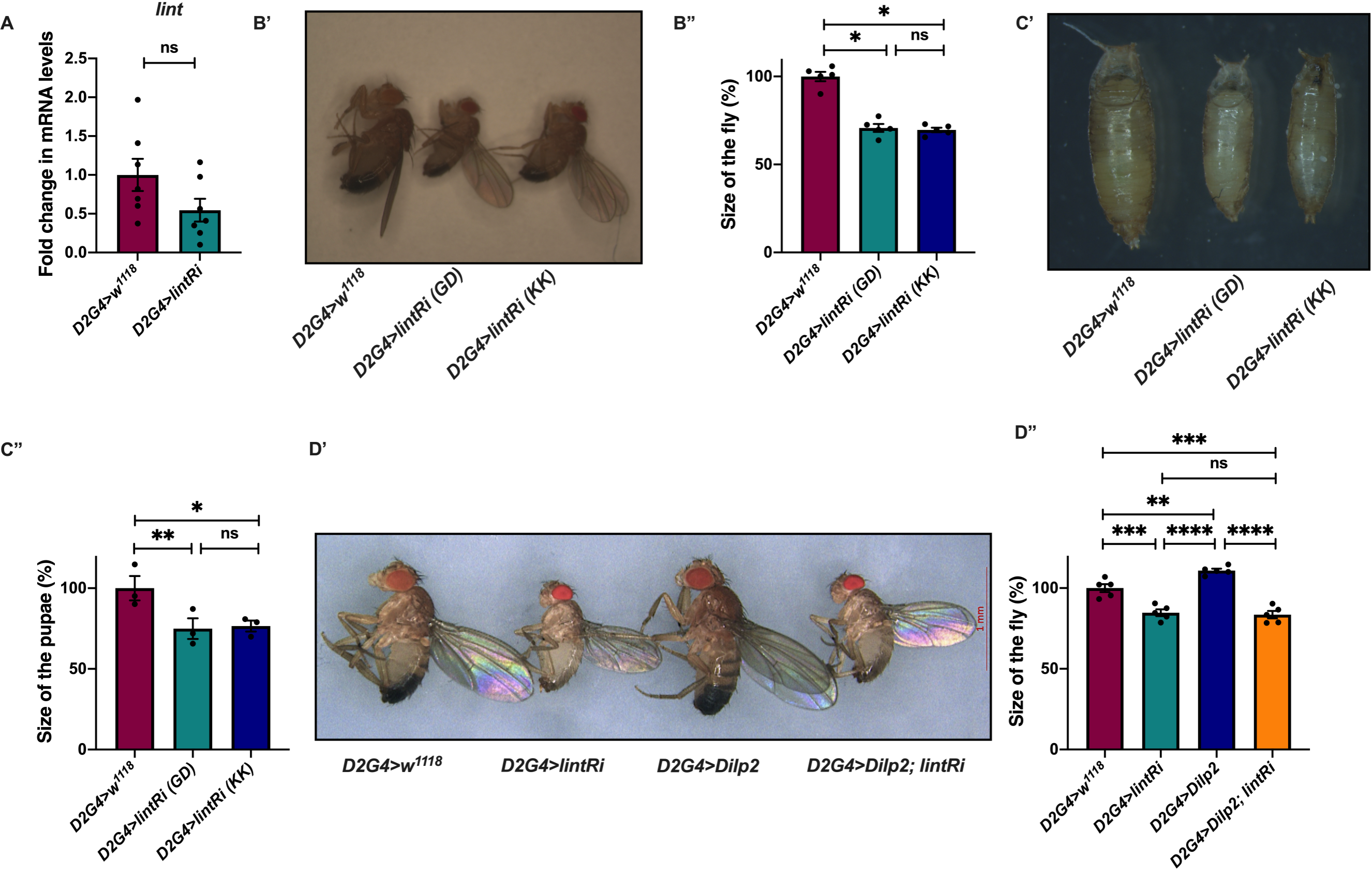
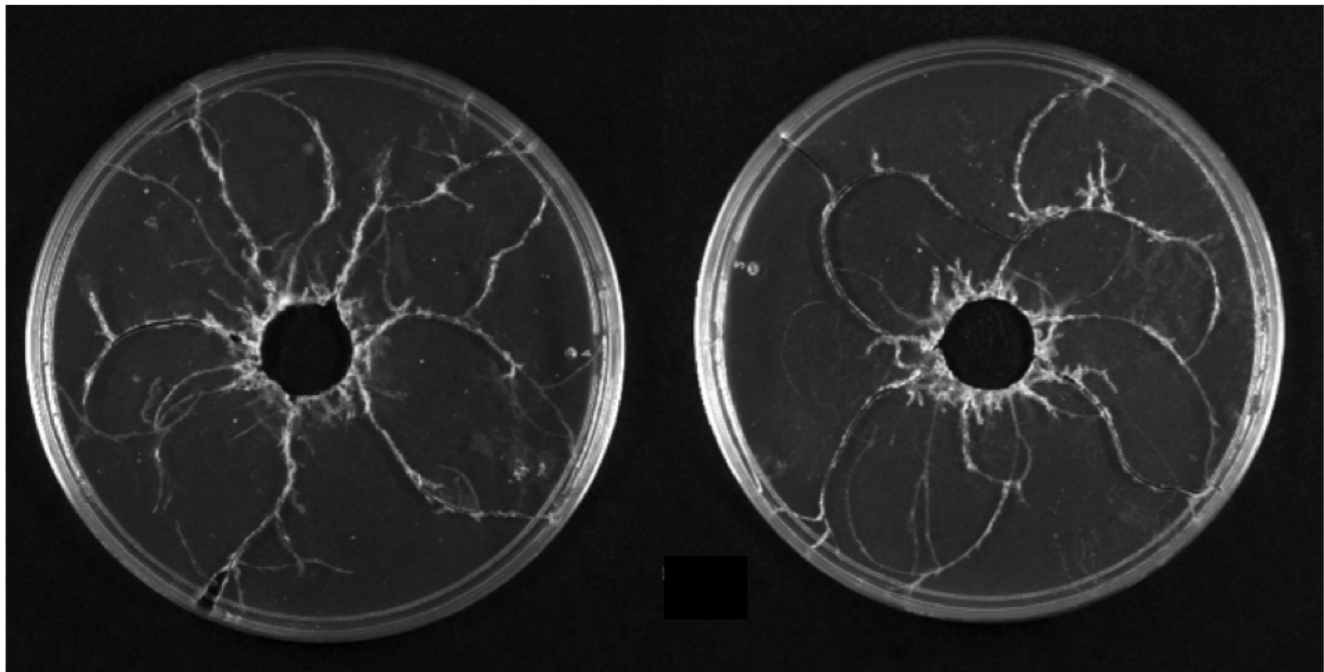


Figure S2

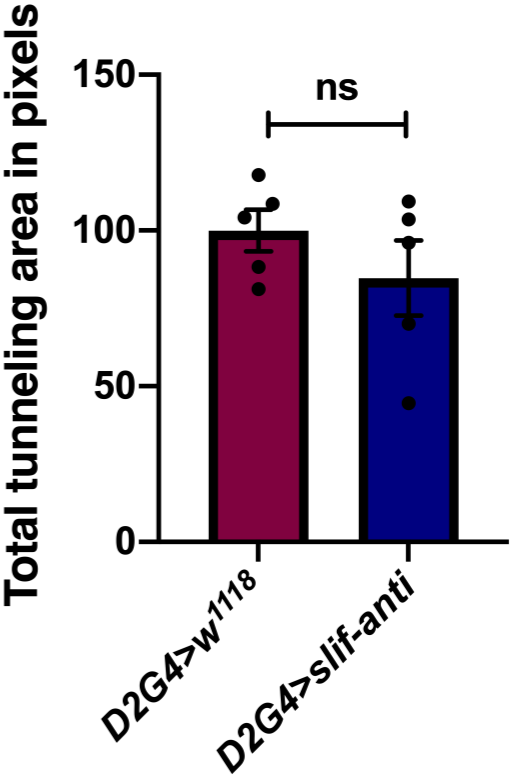
A'

D2G4>w¹¹¹⁸

D2G4>Slif-anti



A''



B'

D2G4>w¹¹¹⁸

D2G4>lintRi

D2G4>Slif-anti



B''

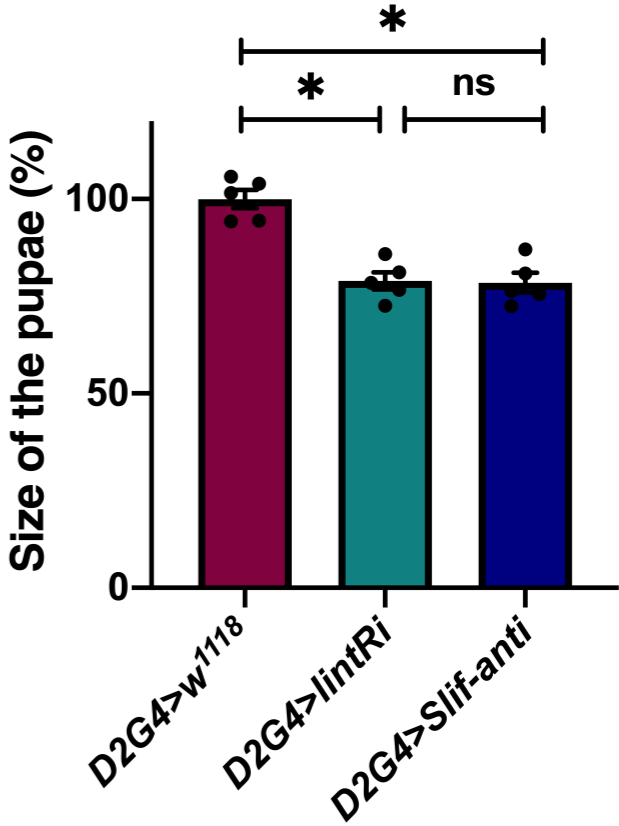


Figure S3

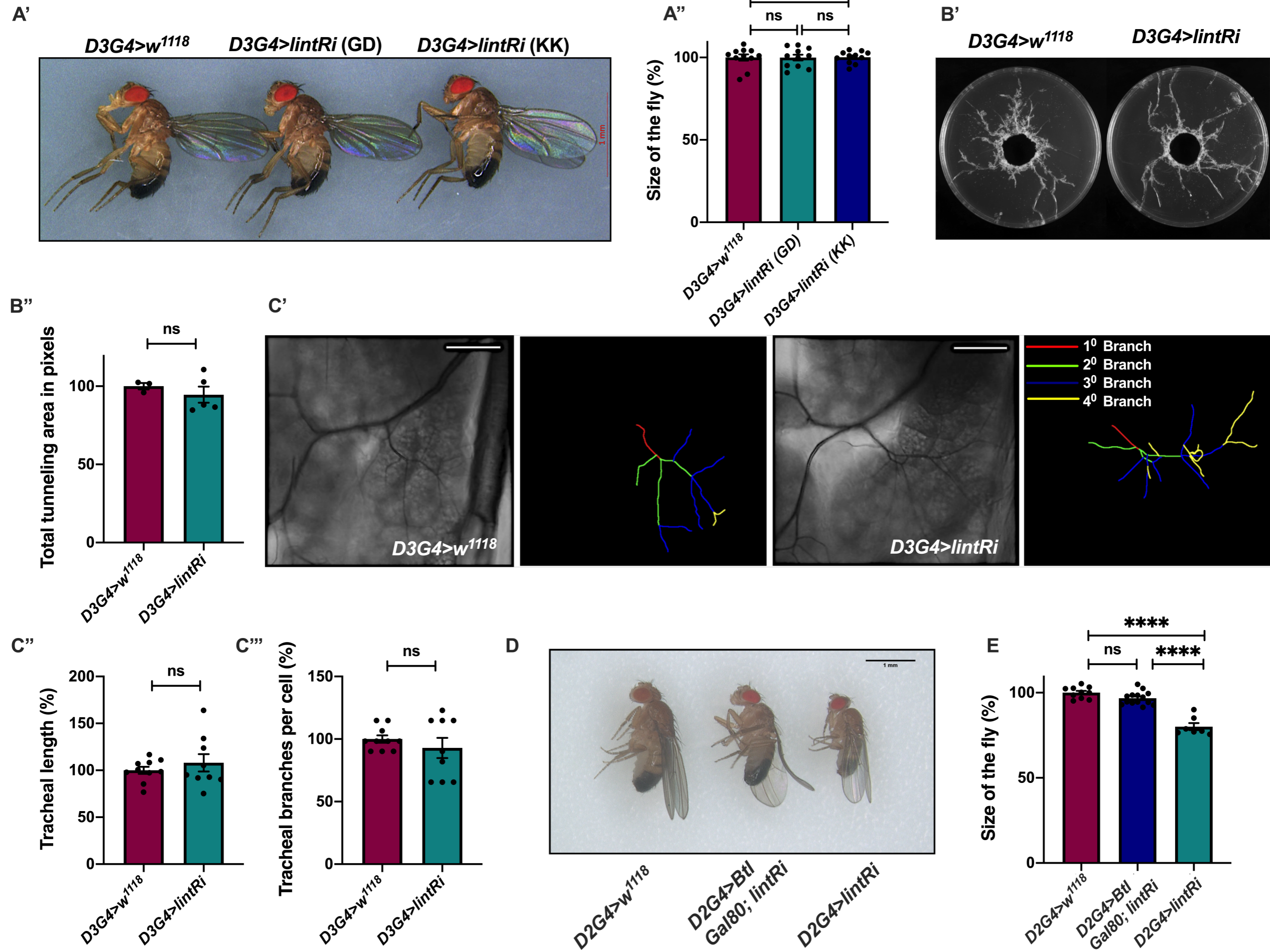


Fig S1. Lint downregulation leads to decrease in the size of the organism

- (A) Blocking *lint* expression using RNAi in the IPCs led to a decrease in the mRNA levels of *lint* in larvae. Data is shown as fold change in mRNA levels, values are normalised to *Dilp2Gal4>w¹¹¹⁸* and fold change in *Dilp2Gal4>UAS-lint-RNAi* is shown. [independent biological replicates = 7, P-value between control and *UAS-lint-RNAi* is 0.0982 (Unpaired t test)].
- (B) Blocking *lint* expression using two independent RNAi in the IPCs led to reduced size in adult male flies (B'). (B'') Data is shown as % size of the fly, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and decrease in experimental conditions *Dilp2Gal4>UAS-lint-RNAi (GD)* and *Dilp2Gal4>UAS-lint-RNAi (KK)* [independent biological replicates = 3, P-value between control and *UAS-lint-RNAi (GD)* is 0.0327, P-value between control and *UAS-lint-RNAi (KK)* is 0.0175 and P-value between *UAS-lint-RNAi (GD)* and *UAS-lint-RNAi (KK)* is >0.9999 (Kruskal-Wallis test followed by Dunn's post hoc test)].
- (C) Blocking *lint* expression using two independent RNAi in the IPCs led to reduced size in pupae. (C'') Data is shown as % size of the pupa, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and decrease in experimental conditions *Dilp2Gal4>UAS-lint-RNAi (GD)* and *Dilp2Gal4>UAS-lint-RNAi (KK)* [independent biological replicates = 3, P-value between control and *UAS-lint-RNAi (GD)* is 0.0024, P-value between control and *UAS-lint-RNAi (KK)* is 0.0119 and P-value between *UAS-lint-RNAi (GD)* and *UAS-lint-RNAi (KK)* is >0.9999 (Kruskal-Wallis test followed by Dunn's post hoc test)].
- (D) Over-expression of DILP2 in the IPCs did not rescue the size phenotype caused by *lint-Ri* (D'). Data is shown as % size of the flies, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and changes in experimental conditions *Dilp2Gal4>UAS-lint-RNAi (GD)*, *Dilp2Gal4>UAS-Dilp2; UAS-lint-RNAi* and *Dilp2Gal4>UAS-Dilp2* [independent biological replicates = 5, P-value between control and *UAS-lint-RNAi* is 0.0004, P-value between control and *UAS-Dilp2; UAS-lint-RNAi* is 0.0002, P-value between control and *UAS-Dilp2* is 0.0094, P-value between *UAS-lint-RNAi* and *UAS-Dilp2* is <0.0001, P-value between *UAS-lint-RNAi* and *UAS-Dilp2; UAS-lint-RNAi* is 0.9758, P-value between *UAS-dilp2* and *UAS-Dilp2; UAS-lint-RNAi* is <0.0001. (Ordinary one-way ANOVA test followed by Tukey's post hoc test)].

[P-value *<0.05; ** <0.01, *** <0.001, **** <0.0001; Data information: In (A, B'', C'' and D'') data are presented as mean ± SEM].

Fig S2. Overexpression of slif-anti did not affect the tunneling in larvae

- (A) Overexpression of *UAS-slif-anti* in the IPCs did not affect the tunneling behavior in larvae when compared to control larvae (A'). (A'') Data is shown as % total tunneling, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and experimental condition *Dilp2Gal4>UAS-slif-anti* [independent biological replicates = 5, P-value between control and *UAS-slif-anti* is 0.3093 (Welch's t test)].
- (B) Expression of *UAS-slif-anti* and *UAS-lint-RNAi* in the IPCs reduced the size of the pupae (B'). (B'') Data is shown as % size of the pupa, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and decrease in experimental conditions *Dilp2Gal4>UAS-lint-RNAi* and *Dilp2Gal4>UAS-Slif-anti* [independent biological replicates = 5, P-value between control and *UAS-lint-RNAi* is 0.04, P-value between control and *UAS-Slif-anti* is 0.0140 and P-value between *UAS-lint-RNAi* and *UAS-Slif-anti* is >0.9999 (Kruskal-Wallis test followed by Dunn's post hoc test)].

[P-value *<0.05; ** <0.01, *** <0.001, **** <0.0001; Data information: In (A'' and B'') data are presented as mean ± SEM].

Fig S3. Downregulation of *lint* using *Dilp3Gal4* driver did not affect size of flies, tunneling or tracheal morphology in larvae

- (A) Blocking *lint* expression using *Dilp3Gal4* driver did not affect the size in adult male flies (A'). (A'') Data is shown as % size of the fly, normalised to 100% in *Dilp3Gal4>w¹¹¹⁸* (control) and changes in experimental conditions *Dilp3Gal4>UAS-lint-RNAi* (GD) and *Dilp3Gal4>UAS-lint-RNAi* (KK) [independent biological replicates = 11, P-value between control and *UAS-lint-RNAi* (GD), P-value between control and *UAS-lint-RNAi* (KK) and P-value between *UAS-lint-RNAi* (GD) and *UAS-lint-RNAi* (KK) is >0.9999 (Kruskal-Wallis test followed by Dunn's post hoc test)].
- (B) Expression of *UAS-lint-RNAi* using *Dilp3Gal4* driver did not affect the tunneling behavior in larvae when compared to control larvae (B'). (B'') Data is shown as % total tunneling, normalised to 100% in *Dilp3Gal4>w¹¹¹⁸* (control) and experimental condition *Dilp3Gal4>UAS-lint-RNAi* [independent biological replicates = 3 for control and 5 for *Dilp3Gal4>UAS-lint-RNAi*. P-value between control and *UAS-lint-RNAi* is (0.3719) (Welch's t test)].
- (C) Downregulation of *lint* in *Dilp3Gal4* background did not affect terminal tracheal cell length and tracheal branches per cell when compared with control larvae (C'). (C'') Data is shown as % tracheal length, normalised to 100% in *Dilp3Gal4>w¹¹¹⁸* (control) and changes in experimental condition *Dilp3Gal4>UAS-lint-RNAi* [independent biological replicates = 10 for control and 9 for *Dilp3Gal4>UAS-lint-RNAi*. P-value between control and *UAS-lint-RNAi* is . (0.4382) (Welch's t test)]. (C''') Data is shown as % tracheal branches per cell, normalised to 100% in *Dilp3Gal4>w¹¹¹⁸* (control) and changes in experimental condition *Dilp3Gal4>UAS-lint-RNAi* [independent biological replicates = 10 for control and 9 for *Dilp3Gal4>UAS-lint-RNAi*. P-value between control and *UAS-lint-RNAi* is (0.4279) (Welch's t test)].
- (D) and (E) Blocking *lint* expression using RNAi specifically in the IPCs using *BreathlessGal80* along with *Dilp2Gal4* driver did not affect the size in adult male flies. Data is shown as % size of the fly, normalised to 100% in *Dilp2Gal4>w¹¹¹⁸* (control) and changes in experimental conditions *Dilp2Gal4>UAS-lint-RNAi* and *Dilp2Gal4>BreathlessGal80; UAS-lint-RNAi* [independent biological replicates = 4, P-value between control and *UAS-lint-RNAi* is <0.0001, control and *Dilp2Gal4>BreathlessGal80; UAS-lint-RNAi* is 0.1519 and *Dilp2Gal4>UAS-lint-RNAi* and *Dilp2Gal4>BreathlessGal80; UAS-lint-RNAi* is <0.0001 (Ordinary one-way ANOVA followed by Tukey's post hoc test)].

[P-value *<0.05; ** <0.01, * <0.001, **** <0.0001; Data information: In (A'', B'', B''', C'' and E) data are presented as mean ± SEM].**