Supporting Information Figure Legends

Figure S1. Lack of dehydration during eRING testing and fly water content. (A) Wet weight (per fly) before and after eRING testing in Canton-S females (CS F), Canton-S males (CS M), and females of *w*[CS], mys^{ts2} and scb^{Vol2}. Wet weight was not altered by eRING testing (two-way ANOVA, n.s., n=5-10 groups of 25 flies/genotype and sex). Wet weight was affected by genotype and sex (two-way ANOVA, $p<0.0001$). (B) Water content in control female and male flies. Genetic background had no effect on water content (two-way ANOVA, n.s., n=5 groups of 25 flies/background and sex). Water content was greater in females than in males (two-way ANOVA, $p<0.0001$). (C) Water content in control and integrin mutant females was affected by genotype (one-way ANOVA, $p<0.0001$, n = 10-16 groups of 25 flies/genotype). Water content in *w*[CS] was indistinguishable from mys^{ts2}/+, but greater in all other genotypes (Bonferroni's multiple comparison test, $p<0.05$).

Figure S2. **Negative geotaxis in the absence of ethanol in *mys* and *scb* mutant flies.** Negative geotaxis in *mys* (A), *scb* (B) and *mys*;*scb* double mutants (C) was not different than in *w*[CS] control flies (individual one-way ANOVAs, n.s.; n = 10) when tested in eRING assays with vehicle (water) alone. Data are mean ± S.E.M. and were compiled from 3 or more experiments with a total of 10 vials of 25 flies/vial.

Figure S3. Internal ethanol concentrations during eRING tests in *mys* and *scb* mutants. Internal ethanol concentrations in *w*[CS] control and *mys* (A), *scb* (B) and *mys*;*scb* double mutants (C) increased with exposure time to vapor from a 50% ethanol solution (two-way ANOVA, $p<0.0001$), but were indistinguishable during a first (E) and second (EE) exposure (n.s.). In panel A, genotype had an overall effect on internal ethanol concentrations ($p = 0.0017$), but internal ethanol concentrations in *w*[CS] controls were different only in mys^{ts2} and

$^{mysXG/+}$ at 30 minutes of exposure (*, Bonferroni's multiple comparison, $p<0.05$). Genotype had no significant effect in *scb* (B) or *mys*;*scb* double mutants (C) (n.s.). Data in all panels is derived from 18 vials of 25 flies per genotype.

Figure S4. Ethanol sensitivity during a second exposure to the drug in *mys* and *scb* mutant flies. Sensitivity (T50) to a second exposure to ethanol vapor from a 50% solution was significantly affected by genotype in (A) *mys*, (B) *scb* and (C) *mys*;*scb* double mutants (individual one-way ANOVAs, $p<0.0001$, n = 10-30 per genotype). Bonferroni's multiple comparison tests revealed that mys^{ts2}/mys^{XG} was more sensitive than *w*[CS] controls (*$p<0.05$, panel A) and that $scb^{Vol1}/+$ and $scb^{Vol2}/+$ were less sensitive to ethanol compared to *w*[CS] controls (*$p<0.05$, panels B and C). Data (mean ± S.E.M.) were compiled from 3 or more experiments with a total of 10-30 vials of 25 flies/vial.

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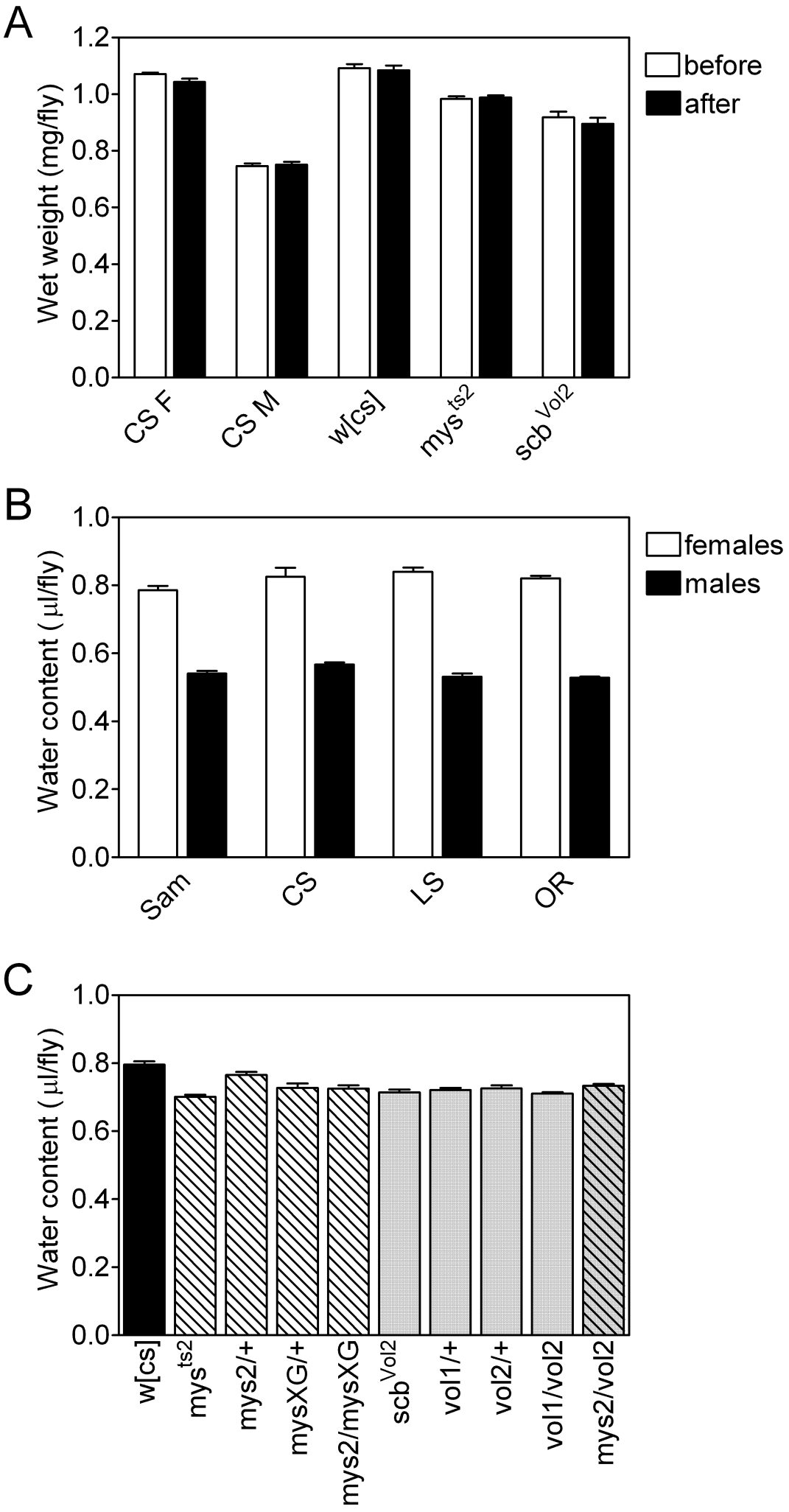

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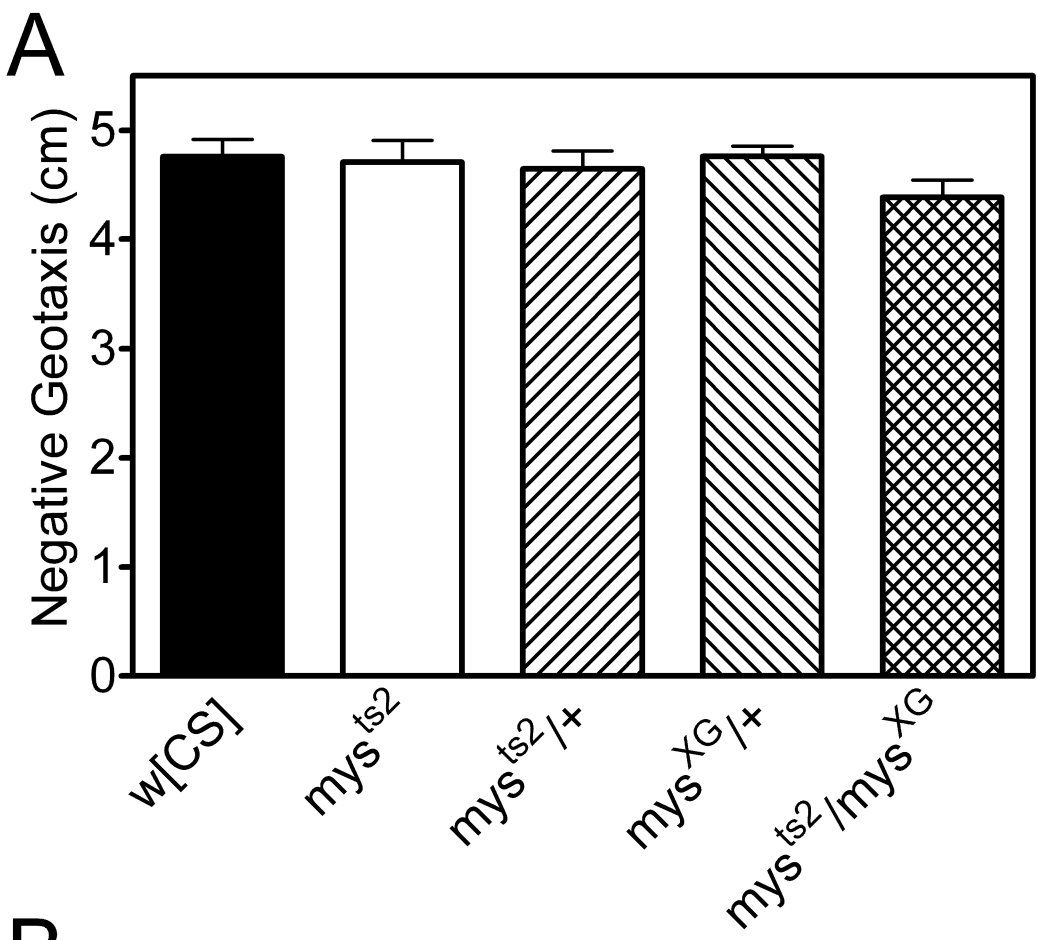

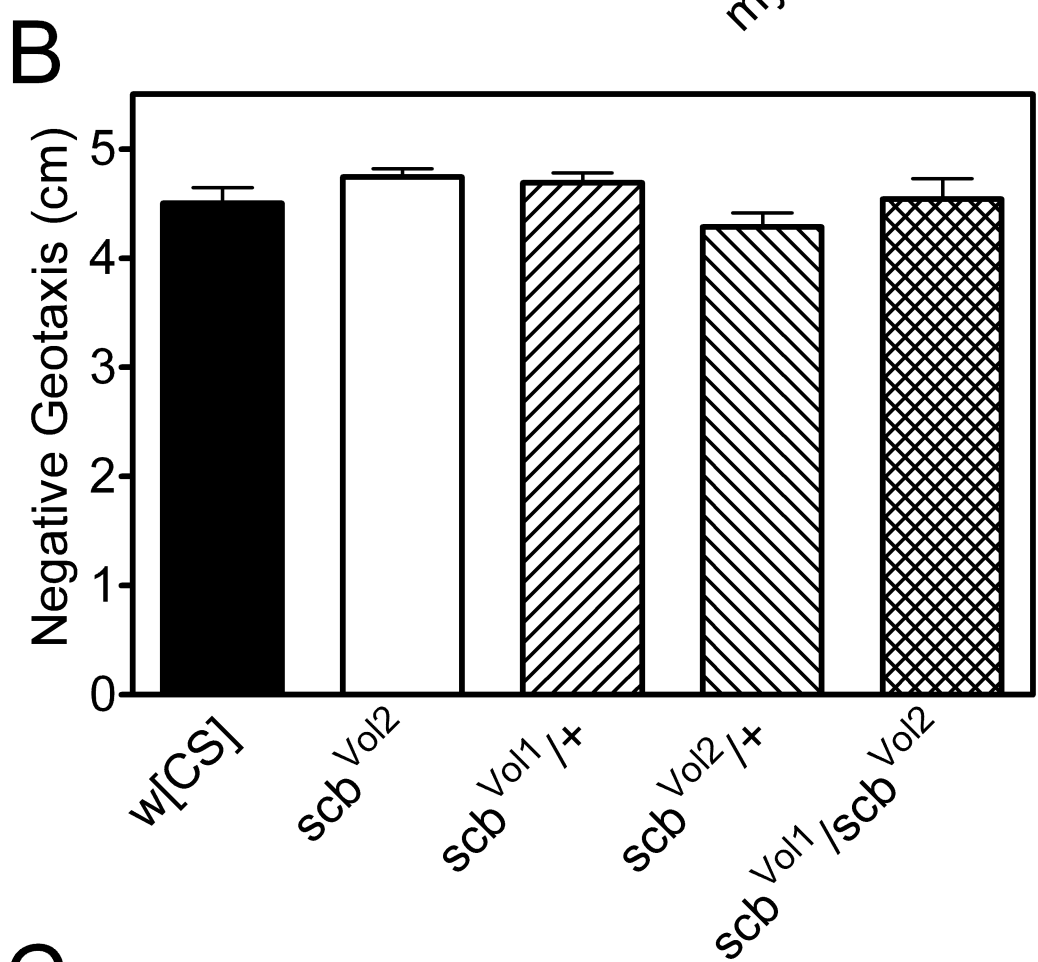

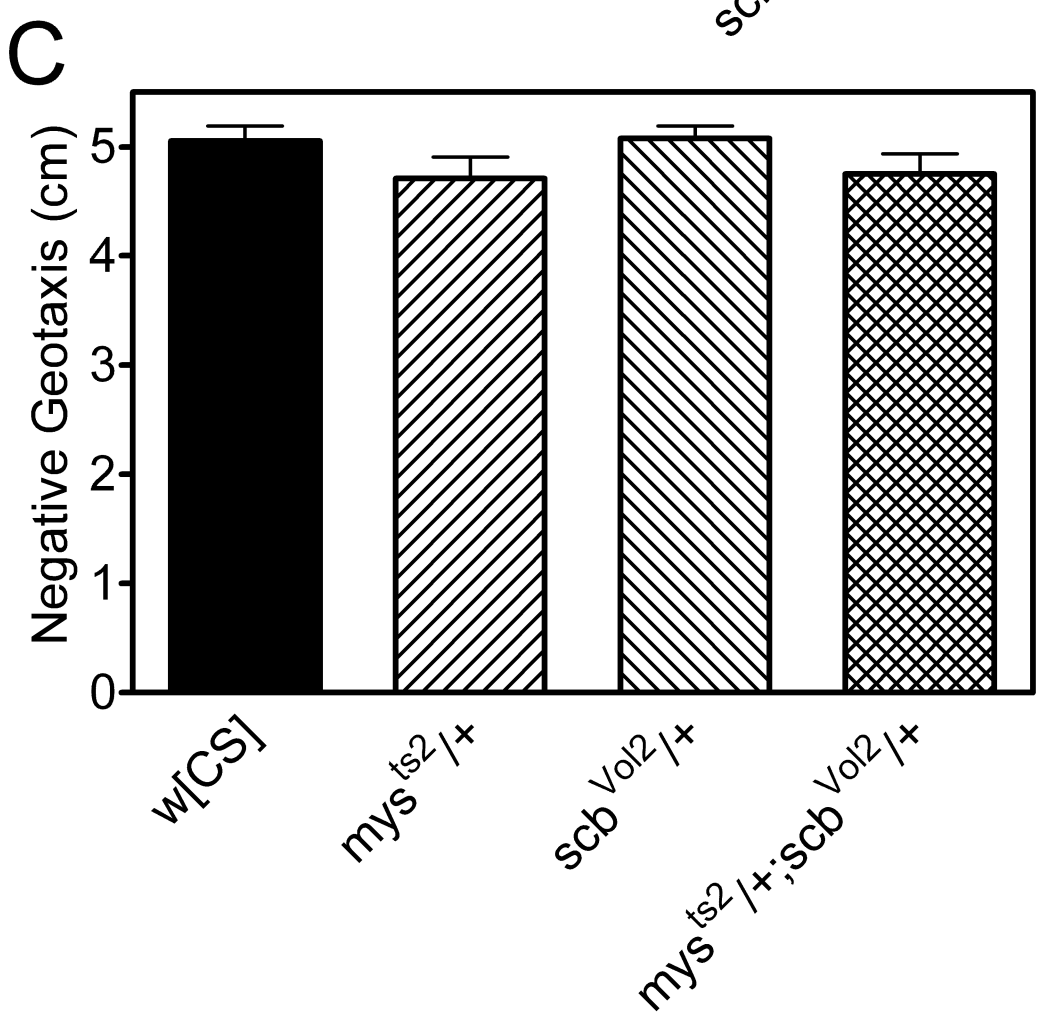

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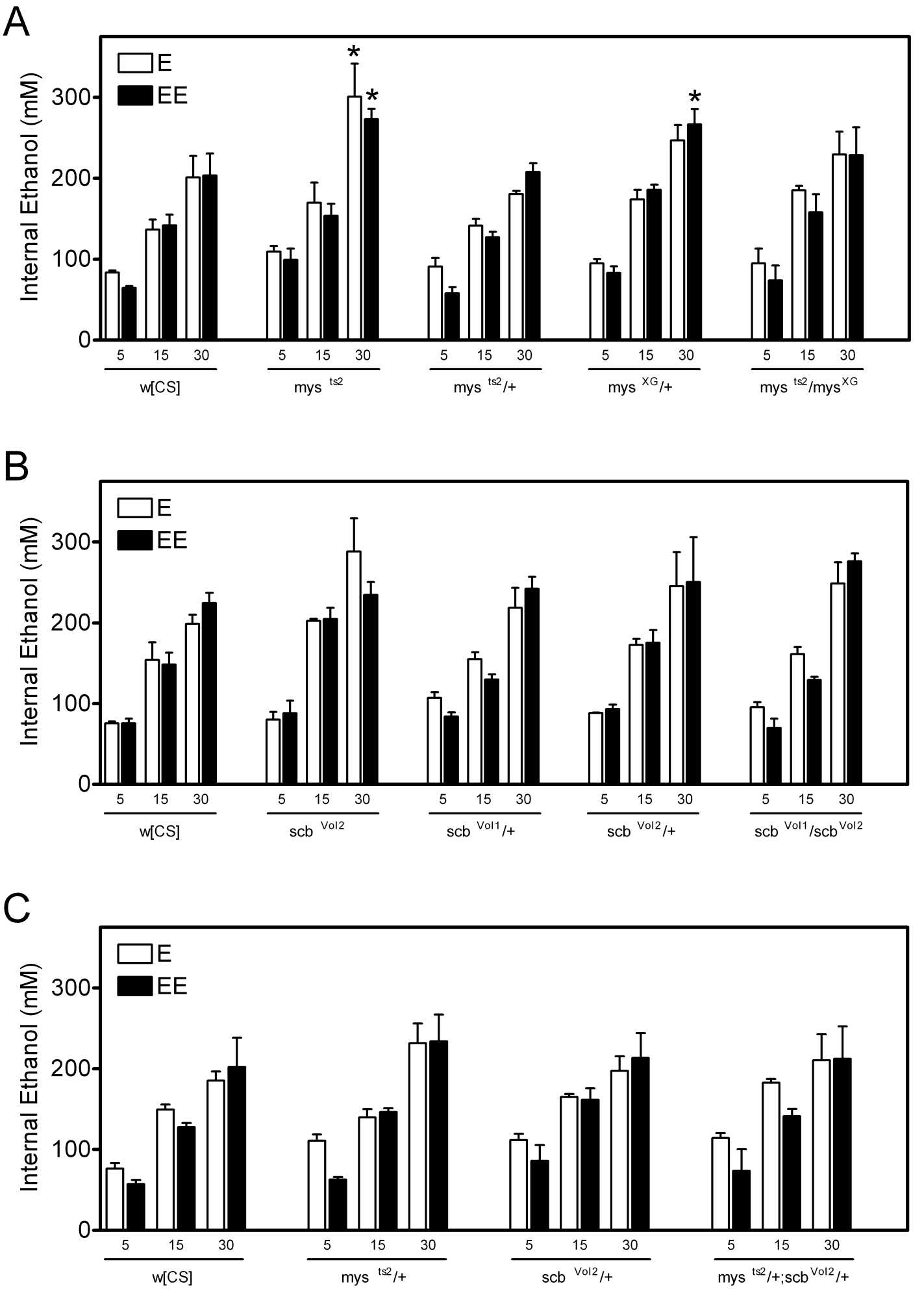

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