***eLife’s* transparent reporting form**

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**Sample-size estimation**

* You should state whether an appropriate sample size was computed when the study was being designed
* You should state the statistical method of sample size computation and any required assumptions
* If no explicit power analysis was used, you should describe how you decided what sample (replicate) size (number) to use

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“Sample size (n) for different experiments was chosen based on previous studies (Forli et al., 2018;Packer et al., 2015;Yang et al., 2018).” This sentence is reported in the Section: Materials and methods - Statistics.

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* You should report how often each experiment was performed
* You should include a definition of biological versus technical replication
* The data obtained should be provided and sufficient information should be provided to indicate the number of independent biological and/or technical replicates
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“The number of animals used for each experimental dataset is specified in the text or in the corresponding Figure legend”. This is reported in the Section: Materials and methods – Animal strains.

“Analysis presented in this manuscript included all recordings with no technical issues” This sentence is reported in the Section: Materials and methods – Statistics.

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* Statistical analysis methods should be described and justified
* Raw data should be presented in figures whenever informative to do so (typically when N per group is less than 10)
* For each experiment, you should identify the statistical tests used, exact values of N, definitions of center, methods of multiple test correction, and dispersion and precision measures (e.g., mean, median, SD, SEM, confidence intervals; and, for the major substantive results, a measure of effect size (e.g., Pearson's r, Cohen's d)
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In the same paragraph of the text, all the statistical test used are described; information about the statistical test is also reported in the Figure legends or in the text together with the related p-value.

Raw data are presented in figures.

(For large datasets, or papers with a very large number of statistical tests, you may upload a single table file with tests, Ns, etc., with reference to sections in the manuscript.)

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* Indicate how samples were allocated into experimental groups (in the case of clinical studies, please specify allocation to treatment method); if randomization was used, please also state if restricted randomization was applied
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Randomization: transgenic animals were chosen based on correct genotyping. Experiment contained both male and female animals.

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* Where provided, these should be in the most useful format, and they can be uploaded as “Source data” files linked to a main figure or table
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Numerical data displayed in Fig. 1 are reported in Table S1-S4. We provide Source Data for the data plotted in all the figures as Excel Source Data files.