

## SUPPLEMENTAL MATERIAL

**Table S1.** Quantitative analysis by Electron Microscopy (EM) of SR stacks and TT-extension at the I band in EDL fibers from Control (at 30°C and pH 7.4) and Exercised ex-vivo at 30°C and pH 7.4. Data contained in this Table were used to construct the bar graphs in Fig. 3 C-F.

|                                 | Fibers with SR stacks (%) | N. of SR stacks/<br>100 $\mu\text{m}^2$ | T-Tubule length<br>$\mu\text{m}/100 \mu\text{m}^2$ | SR+TT<br>$\mu\text{m}/\mu\text{m}^2$ |
|---------------------------------|---------------------------|---|--|--------------------------------------|
| <b>Control:<br/>30° 7.4</b>     | 26.3 $\pm$ 5.0            | 2.8 $\pm$ 0.7                           | 1.5 $\pm$ 0.4                                      | 0.9 $\pm$ 0.3                        |
| <b>Ex. ex-vivo:<br/>30° 7.4</b> | 68.4 $\pm$ 3.2*           | 9.6 $\pm$ 0.5*                          | 7.3 $\pm$ 0.1*                                     | 2.7 $\pm$ 0.2*                       |

Data are shown as mean  $\pm$  SEM ; \* $p < 0.05$ . Samples size: 3 mice for each group.

**Table S2.** Quantitative analysis by EM of SR stacks and TT-extension at the I band in EDL fibers from Control (at 25°C and pH 7.4), Exercised ex-vivo at 25°C and pH 7.4 and Exercised ex-vivo at 36°C and pH 7.4. Data contained in this Table were used to construct the bar graphs in Fig. 3 D-G.

|                                 | Fibers with SR stacks (%) | N. of SR stacks/<br>100 $\mu\text{m}^2$ | T-Tubule length<br>$\mu\text{m}/100 \mu\text{m}^2$ | SR+TT<br>$\mu\text{m}/\mu\text{m}^2$ |
|---------------------------------|---------------------------|---|--|--------------------------------------|
| <b>Control:<br/>25° 7.4</b>     | 27.8 $\pm$ 1.4            | 2.4 $\pm$ 0.9                           | 1.9 $\pm$ 0.5                                      | 0.9 $\pm$ 0.4                        |
| <b>Ex. ex-vivo:<br/>25° 7.4</b> | 23.3 $\pm$ 3.3*           | 2.5 $\pm$ 0.7*                          | 1.9 $\pm$ 0.5*                                     | 1.0 $\pm$ 0.5*                       |
| <b>Ex. ex-vivo:<br/>36° 7.4</b> | 72.6 $\pm$ 2.6*           | 9.8 $\pm$ 0.1*                          | 7.6 $\pm$ 0.2*                                     | 3.0 $\pm$ 0.1*                       |

Data are shown as mean  $\pm$  SEM; \* $p < 0.05$  vs. Control: 25° 7.4. Samples size: 6 Control mice, 3 mice for both Ex. ex-vivo: 25° 7.4 and Ex. ex-vivo: 36° 7.4 groups.

**Table S3.** Quantitative analysis by EM of SR stacks and TT-extension at the I band in EDL fibers from Control (at 25°C and pH 7.4), Exercised ex-vivo at 25°C and pH 7.4 and Exercised ex-vivo at 25°C and pH 7.2. Data contained in this Table were used to construct the bar graphs in Fig. 3 D-G.

|                                 | Fibers with SR stacks (%) | N. of SR stacks/<br>100 $\mu\text{m}^2$ | T-Tubule length<br>$\mu\text{m}/100 \mu\text{m}^2$ | SR+TT<br>$\mu\text{m}/\mu\text{m}^2$ |
|---------------------------------|---------------------------|---|--|--------------------------------------|
| <b>Control:<br/>25° 7.4</b>     | 27.8 $\pm$ 1.4            | 2.4 $\pm$ 0.9                           | 1.9 $\pm$ 0.5                                      | 0.9 $\pm$ 0.4                        |
| <b>Ex. ex-vivo:<br/>25° 7.4</b> | 23.3 $\pm$ 3.3            | 2.5 $\pm$ 0.7                           | 1.9 $\pm$ 0.5                                      | 1.0 $\pm$ 0.5                        |
| <b>Ex. ex-vivo:<br/>25° 7.2</b> | 63.3 $\pm$ 3.3*           | 9.5 $\pm$ 1.2*                          | 7.5 $\pm$ 0.8*                                     | 4.6 $\pm$ 0.6*                       |

Data are shown as mean  $\pm$  SEM; \* $p < 0.05$  vs. Control: 25° 7.4. Samples size: 6 Control mice, 3 mice for both Ex. ex-vivo:25° 7.4 and Ex. ex-vivo: 25° 7.2 groups.