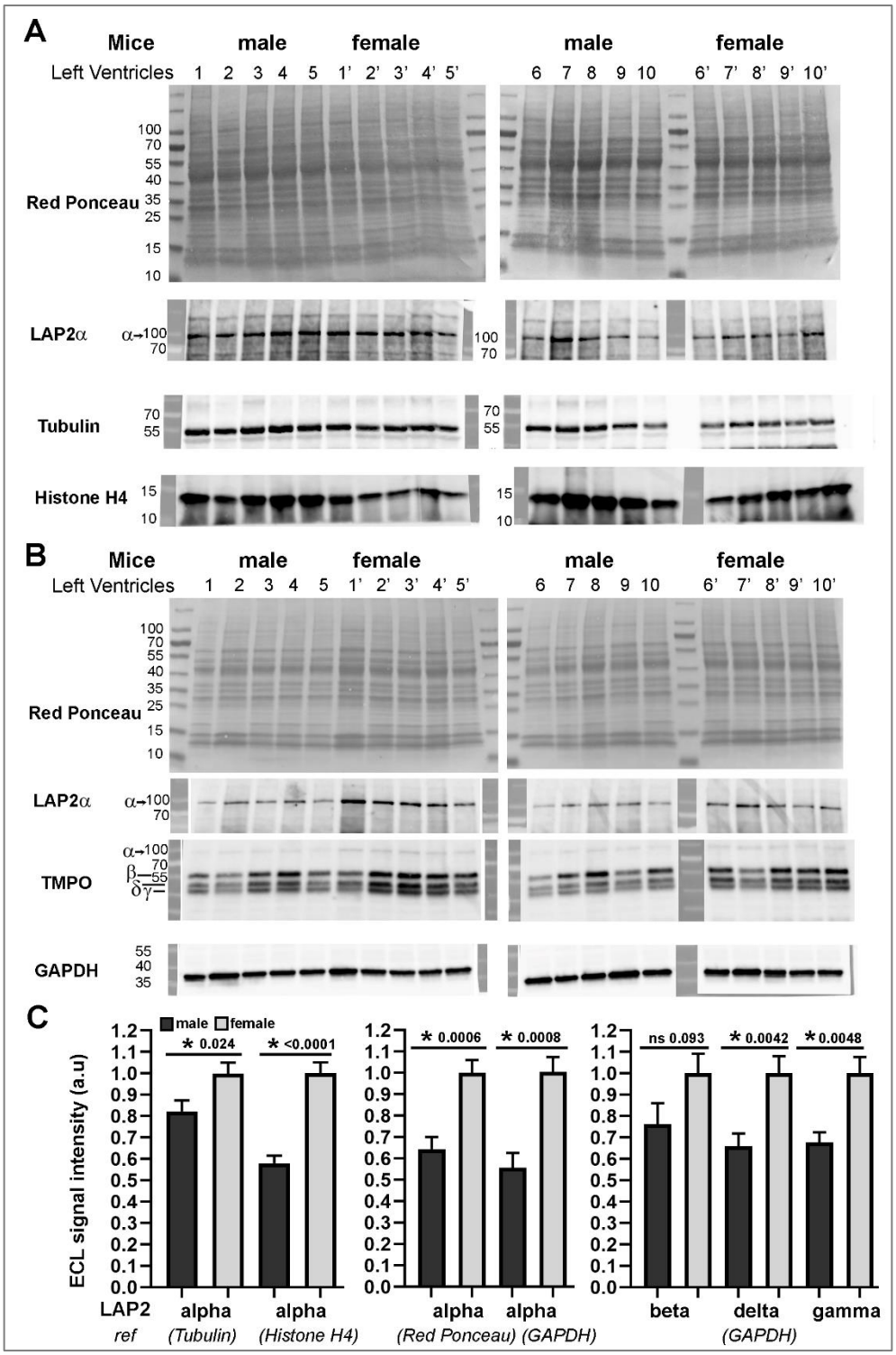

Figure S1. Relative expression level of LAP2 proteins in males vs females mice aged of 9 weeks. Western blot on whole extracts of LV from 10 male mice (1–10) and 10 female mice (1'–10'). (**A**), In a first set of gels, western blots were stained with red ponceau and incubated with anti-LAP2α antibodies, while Tubulin and Histone H4 were used to normalize ECL signals. (**B**), In a second set of gels, western blots were stained with red ponceau and incubated first with anti-LAP2α antibodies and subsequently with TMPO antibodies (that recognize all LAP2 proteins), while Red Ponceaui staining or GAPDH were used

to normalize ECL signals. (**C**) The graph shows ECL signal quantification related to (**A**) and (**B**) (mean ± s.e.m; n = 10). For the statistic analyses, precise p values are indicated.

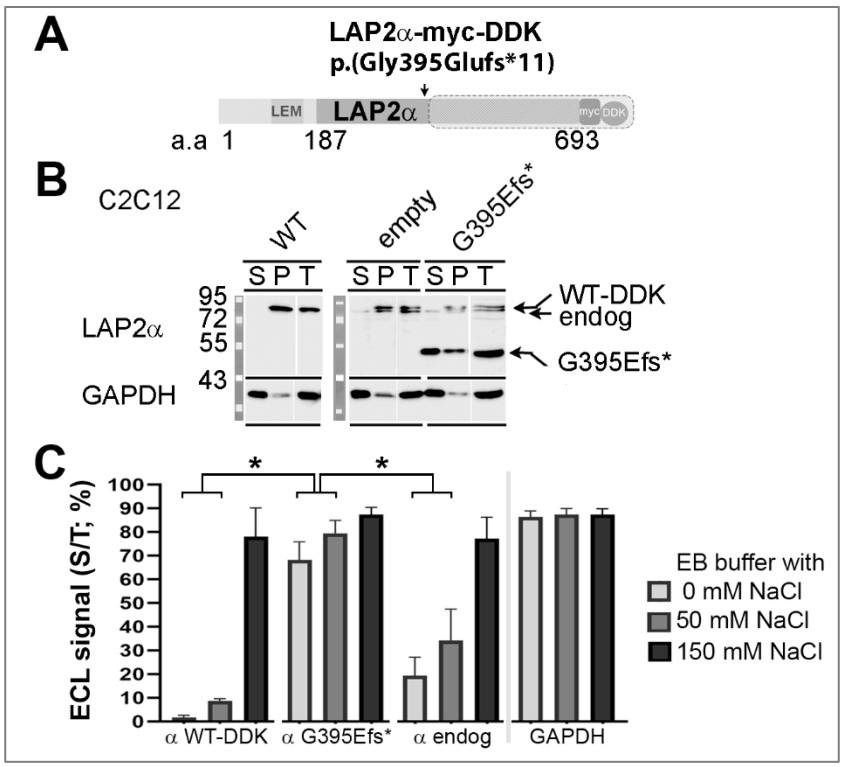

Figure S2. High solubility properties of truncated LAP2α in cells**.** (**A**) Schematic secondary structure of exogenous p.(Gly395Glufs*11) (G395Efs*) LAP2α proteins. (**B**) LAP2α western blot on whole cell extracts of C2C12 cells overexpressing either wild-type (WT-DDK) or mutant (G395Efs*) LAP2α or transfected with an empty vector (empty). LAP2α and GAPDH western blots on fractions of proteins released in the Supernatant (S) or remaining in the pellet (P) after extraction in the presence of Triton as well as total proteins (T) of C2C12 cells transfected with either an empty plasmid (empty) or plasmids encoding WT-DDK or G395Efs* LAP2α as indicated. (**C**) Relative quantitative amount of the pool of LAP2α proteins (α WT-DDK, α G395Efs*, α endogenous) released in the supernatant after extraction of C2C12 cells in a buffer containing Triton and either 0 mM, 50 mM or 100 mM NaCl concentrations. The graph shows ECL signal quantification (mean ± sem) of LAP2α proteins detected in the supernatant fraction as compared to total proteins (n = 3 experiments). GAPDH was used as a control cytoplasmic protein.