

Fig. S1. Primary (pink), secondary (blue), and tertiary (yellow) dendrites were traced and highlighted in a representative control neuron and a neuron after 5 days of kalirin knock-down. Cultured neurons were at DIV 28 at the start of transfection. Scale bar: 50 μ m.

Fig. S2. *KALRN* KO mouse. (A) Photograph of a 3-month-old *KALRN* KO mouse and its wild-type littermate. (B) Body weight growth in *KALRN* KO mice and wild-type littermates.

Fig. S3. Golgi-stained sagittal section from the frontal cortex of a WT mouse. Detailed dendritic morphology of pyramidal neurons was revealed and analyzed.

Fig. S4. Frequency distribution of soma sizes. (A) Comparison of the distribution of soma sizes in the frontal cortical layer 5 of the WT and KO littermates. (B) Comparison of the distribution of soma sizes in the frontal cortical layer 2/3 of the WT and KO littermates.