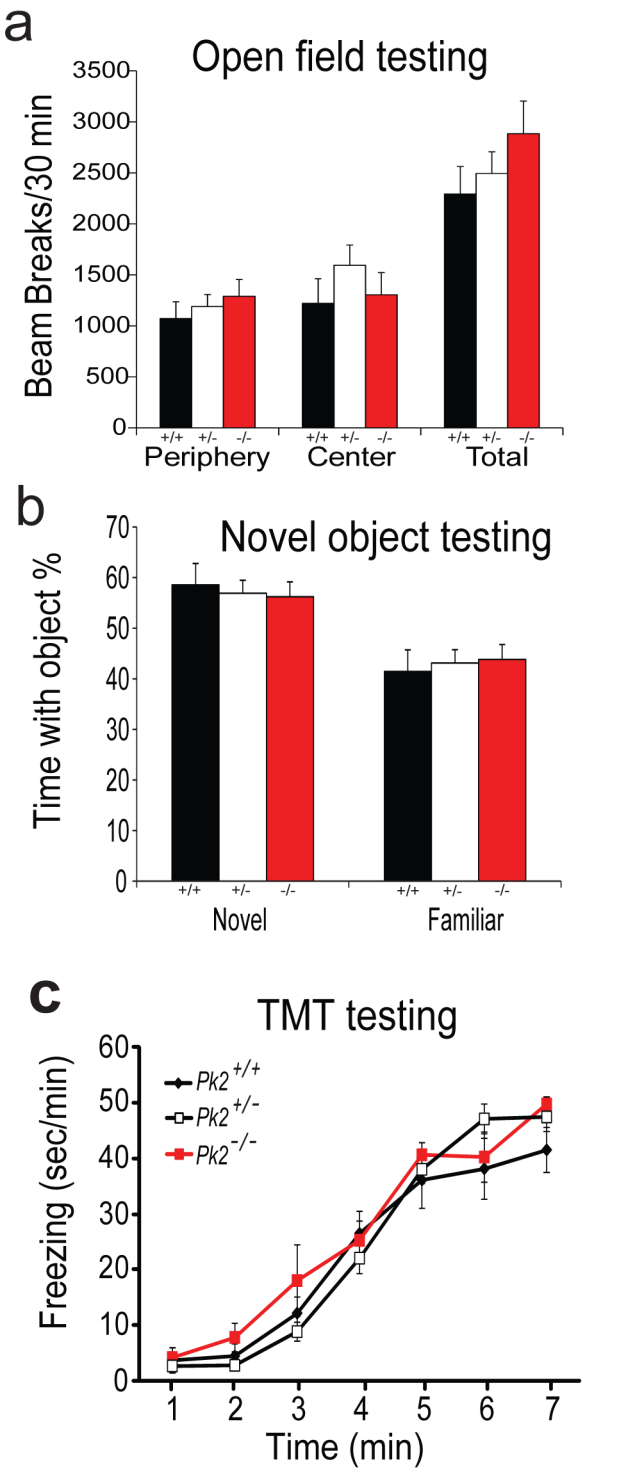
Supplemental Material

Supplementary Figure 1: *Prickle2*$^{-/-}$ and *Prickle2*$^{+/-}$ mice display normal behavior in the open field, novel object recognition, and TMT assays. (a) Open field assay. *Pk2*$^{+/-}$ and *Pk2*$^{-/-}$ mice display normal preference for the center of the chamber versus the periphery. They also show no difference in total locomotion. *Pk2*$^{+/+}$ n=8, *Pk2*$^{+/-}$ n=8, *Pk2*$^{-/-}$ n=8. Center: $p>0.05$, Periphery: $p>0.05$, Total locomotion: $p>0.05$. **(b)** Novel object recognition all p values >0.05 *Pk2*$^{+/+}$ n=16, *Pk2*$^{+/-}$ n=15, *Pk2*$^{-/-}$ n=15. **(c)** TMT evoked freezing. *Pk2*$^{+/-}$ and *Pk2*$^{-/-}$ mice show normal TMT evoked freezing *Pk2*$^{-/-}$ ($p>0.5$) *Pk2*$^{+/-}$ ($p>0.05$) (*Pk2*$^{+/+}$, n=10; *Pk2*$^{+/-}$, n=10; *Pk2*$^{-/-}$, n=10); $p>0.05$. Error bars represent ± S.E.M. P values analyzed using students T-test.

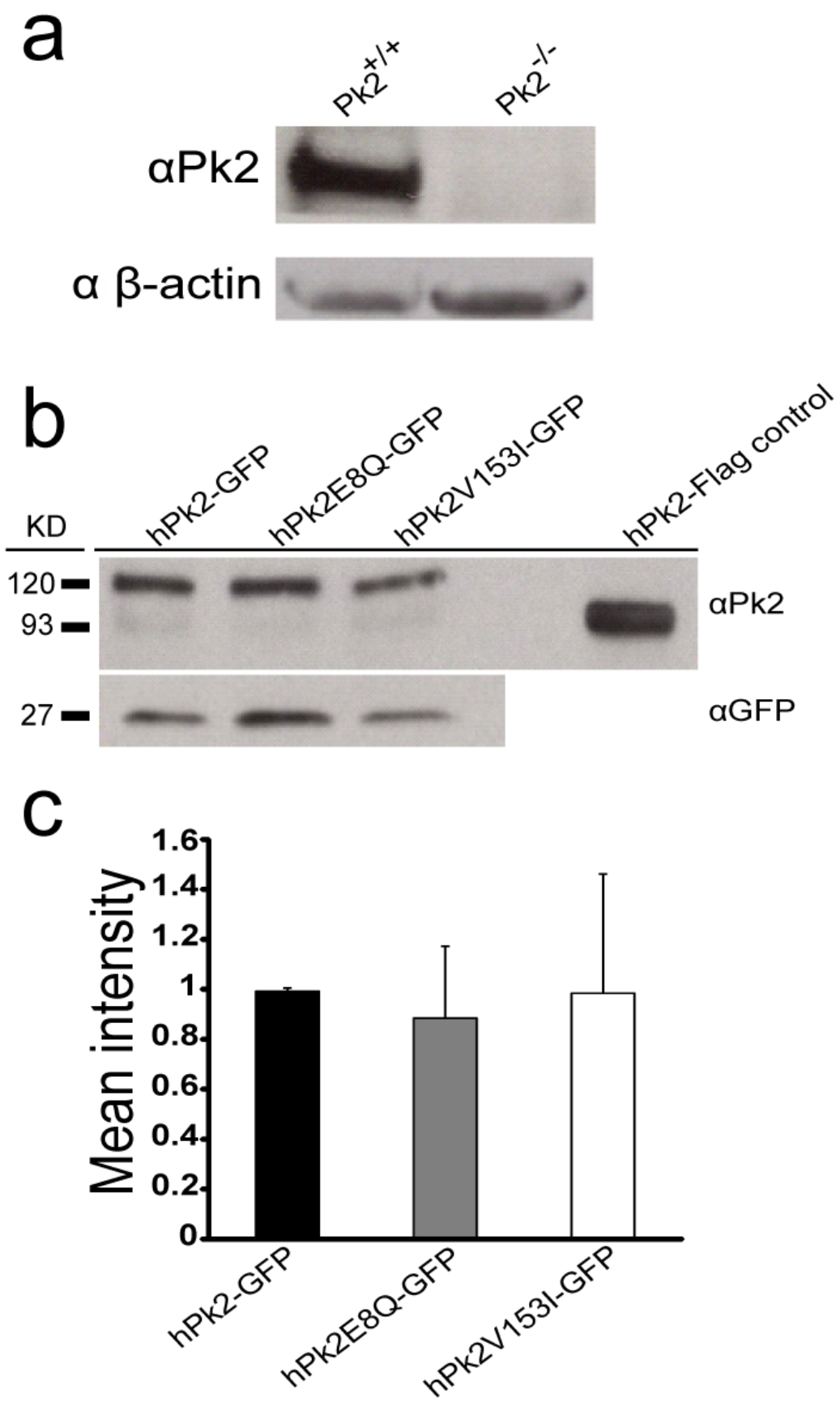
Supplementary Figure 2: Confirmation of rabbit anti-Prickle2 antibody and expression levels of hPk2-GFP constructs. (a) Western blot analysis of $Pk2^{+/+}$ vs. $Pk2^{-/-}$ mouse brain lysate using rabbit anit-Pk2. For loading control, mouse anti-β-actin was used. $Pk2^{-/-}$ mice lack a Pk2 band thus confirming the specificity of rabbit anti-Pk2. **(b)** Representative western blot showing expression levels of Pk2-GFP constructs at 120 KD. Pk2-Flag is a size control at 93 KD, and GFP co-expression is at 27KD. **(c)** Total expression levels of hPk2-GFP for all transfections in cultured primary hippocampal neurons. hPk2-GFP, hPk2E8Q-GFP, and hPk2V153I-GFP are expressed at the same levels $p>0.05$. Three replicates were used to quantify expression. T-test with Bonferroni's correction was used for statistical analysis.

Supplementary Table 1: Coding variant alleles in *PRICKLE2.* Rare (<1% MAF) coding variant alleles in *PRICKLE2* present in the Exome Variant Server and in the ARRA Autism Sequencing Collaboration datasets (all variants were found in the heterozygous state and 4 variants were found in both datasets). The total number of ASD individuals with rare missense *PRICKLE2* variants was significantly over represented ($p=0.0001$) versus control as was the number of unique *PRICKLE2* missense variants in cases versus controls ($p=0.0229$).

Supplementary Figure 1



Supplementary Figure 2



Supplementary table1: Coding variant alleles in *PRICKLE2*

	Exome Variant Server	ARRA Autism Sequencing Collaboration
Total Alternative *PRICKLE2* Alleles (unique variants)	77 (40)	29 (7)
Total *PRICKLE2* Alleles (individuals)	13,004 (6,502)	822 (411)