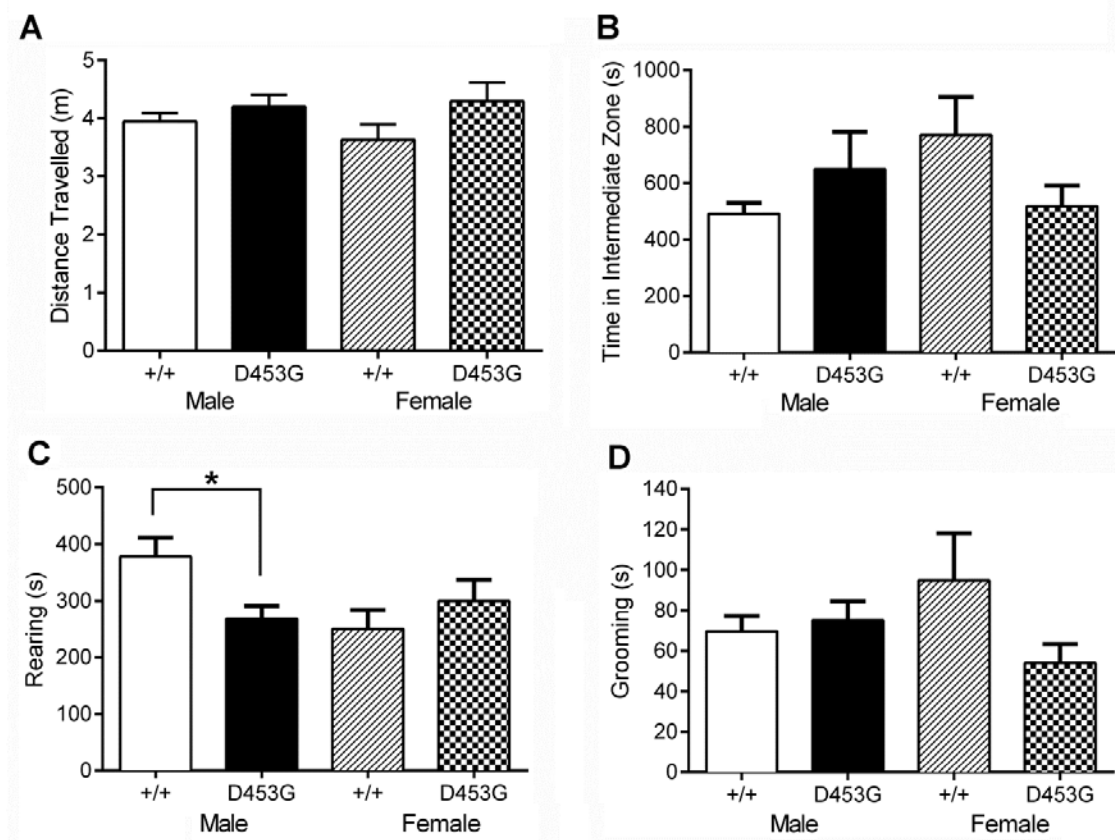


## **Supplementary Information**

### **Missense mutation in DISC1 C-terminal coiled-coil has GSK3 $\beta$ signaling and sex-dependent behavioral effects in mice**

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Clapcote

## Supplementary Fig. S1



### Supplementary Figure S1. Measures of exploration in the open field. (A)

Distance travelled during the first min in the open field showed no significant

differences between genotypes or sexes. (B) The floor of the open field arena

was split into three zones: outer, intermediate and center. There was a difference

approaching significance between female wild-type (+/+) and  $DISC1^{D453G}$

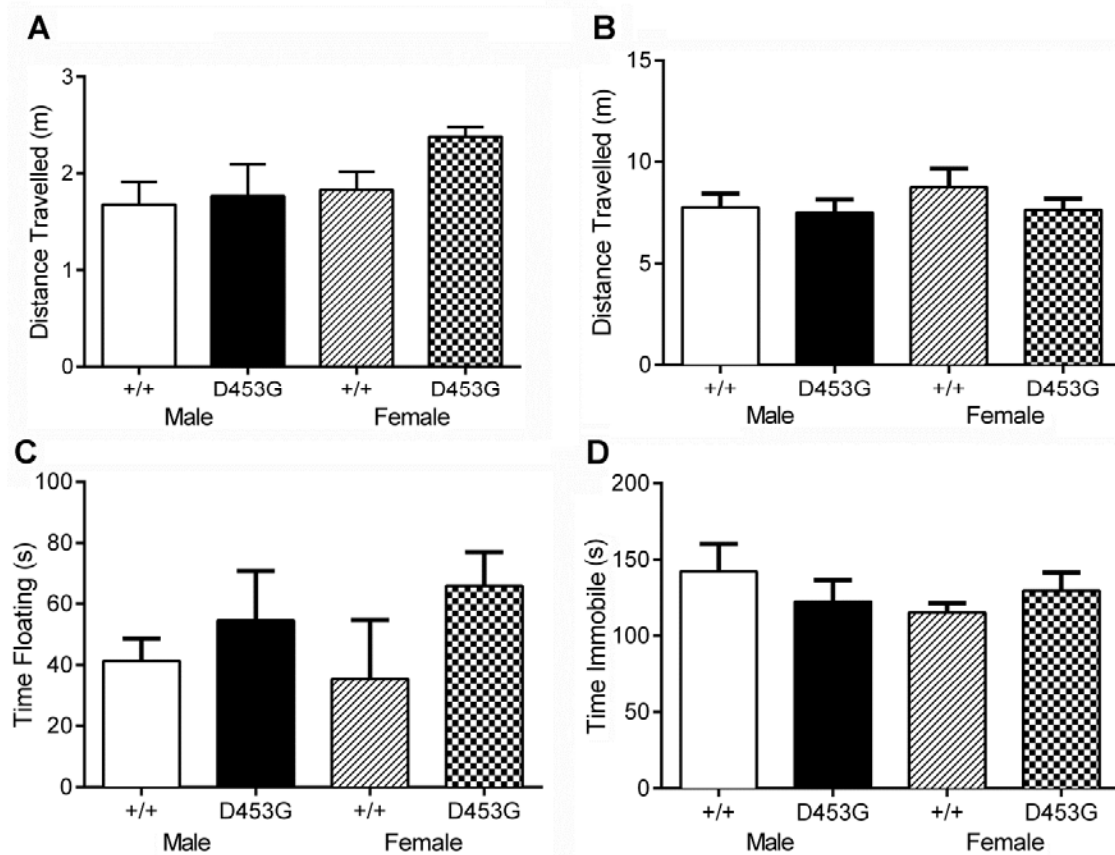
(D453G) mice ( $P = 0.062$ ) for the time spent in the intermediate zone. (C) Male

$DISC1^{D453G}$  mice were found to spend less time making exploratory rearing

movements than wild-type males. (D) All groups spent a similar time self-

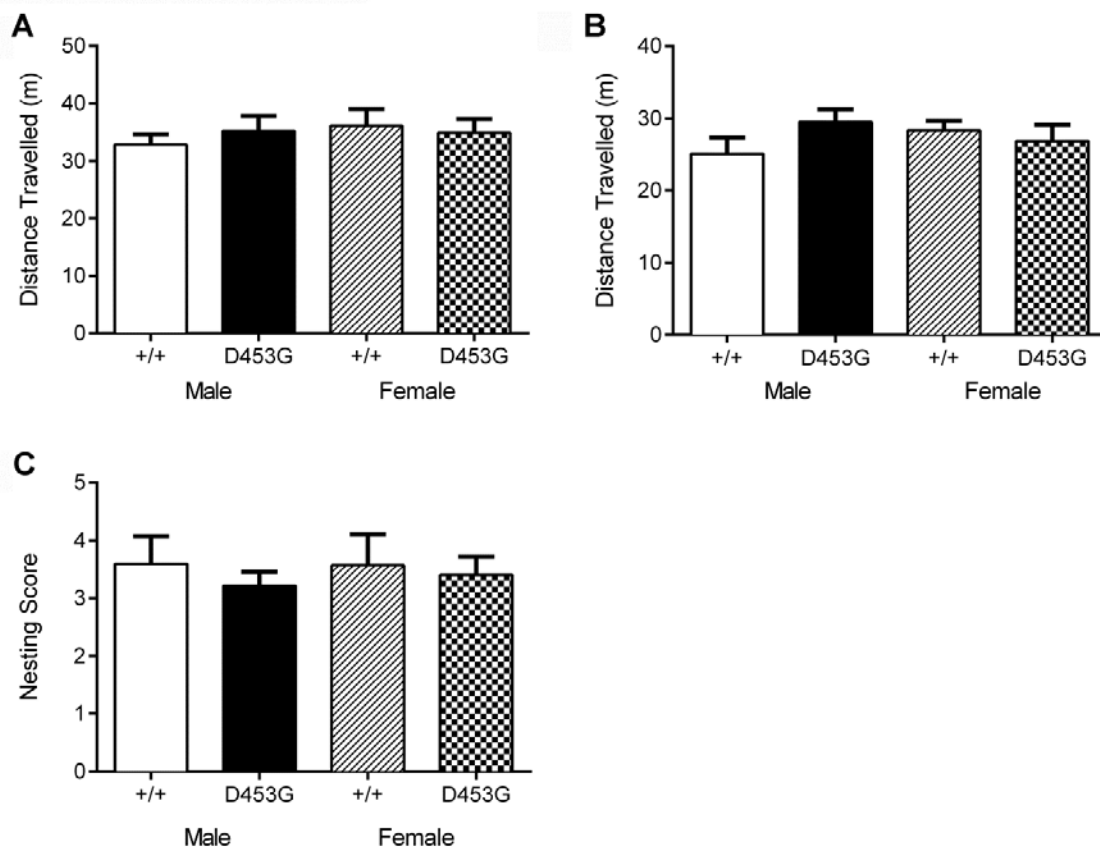
grooming. \* $P < 0.05$  vs. male +/.

## Supplementary Fig. S2



**Supplementary Figure S2. Behaviors in the elevated plus-maze, forced swim test and tail suspension test.** Total distances travelled during the first min (A) and throughout the 5 min elevated plus-maze test (B) were not significantly different between genotypes or sexes. (C) No significant effect of  $DISC1^{D453G}$  on the duration of floating in the forced swim test. (D) No significant effect of  $DISC1^{D453G}$  on the duration of immobility in the tail suspension test.

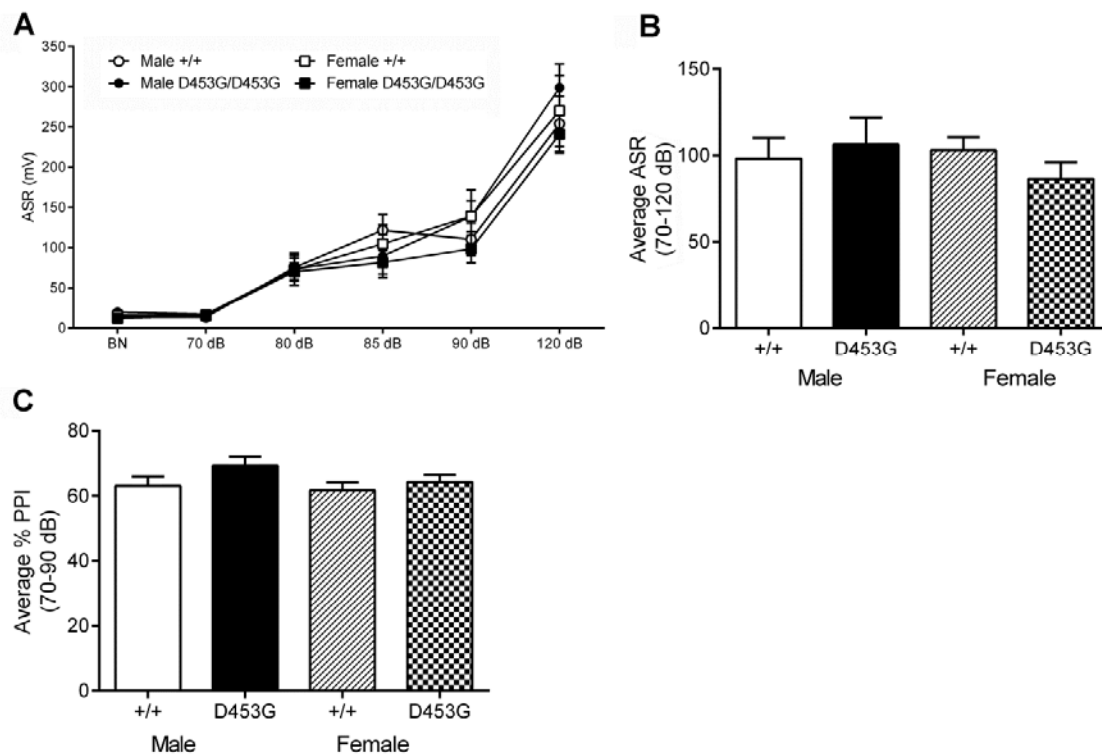
### Supplementary Fig. S3



### Supplementary Figure S3. Social approach test ambulation and nesting

**score.** The total distance travelled during the three-chambered social approach test was similar between all groups in **(A)** phase 1 (sociability: stranger 1 vs. empty container) and **(B)** phase 2 (social recognition: stranger 2 vs. stranger 1). **(C)** No significant genotypic differences in nesting ability, rated on a scale of 1-5. +/+ : wild-type; D453G: DISC1<sup>D453G</sup>.

### Supplementary Fig. S4



### Supplementary Figure S4. Acoustic startle reactivity and average PPI. (A)

Tones of varying intensities (70-120 dB) were presented to mice and the startle response was measured. No genotypic differences in startle response magnitude were observed at any of the tone intensities. (B) Acoustic startle reactivity to

varying tones (70-120 dB) was averaged. No significant differences in average ASR were observed between the genotypes or sexes (two-way ANOVA,

genotype and sex ( $F_{(1, 30)} < 1$ ), sex x genotype ( $F_{(1, 30)} = 1.14$ ,  $P > 0.05$ )). (C)

Prepulse inhibition to all of the prepulse tones (70, 80, 85 and 90 dB) were averaged. No significant differences in PPI were observed between the

genotypes or sexes (two-way ANOVA, genotype ( $F_{(1, 30)} = 2.68$ ,  $P > 0.05$ ), sex

( $F_{(1, 30)} = 1.46$ ,  $P > 0.05$ ), sex x genotype ( $F_{(1, 30)} < 1$ ,  $P > 0.05$ )). +/+ : wild-type;

D453G: DISC1<sup>D453G</sup>.