

**Supplementary Table 4 Summary of abnormal behaviors exhibited by *Dock4* KO mice**

Type of behaviors	Test	Result	Affected gender
Social behavior	Three-chamber	Lack of social novelty preference	M & F <sup>1</sup>
	Pup retrieval	Delayed pup retrieval	F (M not tested)
Language communication	Isolation-induced pup ultrasonic vocalizations	Increased number and duration of calls in pups during isolation	M & F
Repetitive behavior	Homecage observation and open field	Stereotyped circling in ~9% of female KO mice	F
Anxiety	Elevated Zero-maze	Low mobility in the open sections	M & F (M more severe)
	Novel object recognition	Inability to distinguish familiar/novel objects	F
Learning and Memory	Y-maze (spatial recognition)	Inability to distinguish familiar/novel arms	M
	Y-maze (spontaneous alternation)	Decreased alternation among arms and increased total entries	M

<sup>1</sup>M: male; F: female