SUPPLEMENTARY MATERIALS AND METHODS

Open field test

The open field consisted of a plastic box (41 × 41 × 41 cm) equipped with an automated activity monitoring system (TruScan, Coulbourn Instruments, USA). The area of the open field, illuminated with 150 lux, was divided into a 28 × 28 cm central zone and a surrounding border zone. Mice were placed individually into the periphery of the open field and allowed to explore it for 10 min. The following anxiety-related parameters were recorded: entries into the central zone, time spent in it, number of rearings, and the overall distance travelled[1].

Light/dark test

The light/dark testing arena (41 × 41 × 41 cm; TruScan, Coulbourn Instruments, USA) was divided into two halves, comprising a white, aversive compartment illuminated with 400 lux at floor level and a dark, safe compartment covered by a black top illuminated with 10 lux. The compartments were connected by a small opening (7 × 7 cm) located in the centre of the partition at floor level. Animals were individually placed into the dark compartment facing away from the opening and allowed to freely explore the apparatus for 10 min. During the 10 min testing period the behaviour displayed by each mouse was automatically registered and the following anxiety-related parameters quantified: the latency to the first entry into the lit compartment, number of entries into the lit compartment, time spent in the lit compartment, number of rearings and overall distance travelled by the mice[1].

Forced swim test

Mice were individually placed in a glass cylinder (diameter 11.5 cm, height 24 cm) containing 15 cm fresh tap water maintained at 23–24 xC. All sessions (6 min each) were recorded by a

video camera positioned above the cylinders. The duration of immobility throughout the final 4 min of the test was subsequently scored using Eventlog 1.0 (EMCO Software, Iceland) by a trained observer blind to the genotype. Mice were judged immobile when they stopped any movements except those that were necessary to keep their heads above the water level[2].

References

1 Sartori, S. B., Whittle, N., Hetzenauer, A. & Singewald, N. Magnesium deficiency induces anxiety and HPA axis dysregulation: modulation by therapeutic drug treatment. *Neuropharmacology* 62, 304-312, doi:10.1016/j.neuropharm.2011.07.027 (2012).

2 Busquet, P. *et al.* CaV1.3 L-type Ca2+ channels modulate depression-like behaviour in mice independent of deaf phenotype. *The international journal of neuropsychopharmacology / official scientific journal of the Collegium Internationale Neuropsychopharmacologicum* 13, 499-513, doi:10.1017/S1461145709990368 (2010).