Supplemental Material:

1 Housing conditions

Animals were delivered by JANVIER S.A.S (Saint–Berthevin Cedex, France) at minimum 14 days before starting the experiments due to acclimatization. In order to reduce stress to a minimum, the same persons did both the care and the execution of the experiments.

All animals were single housed for the experimental phase in special custom-made observation cages with a dimension of 30 cm x 30 cm floor area x 40 cm height on low-dust wood granulate bedding (Rettenmeier Holding AG, Wilburgstetten, Germany). The animals were kept at room temperature $(22^{\circ}C \pm 2^{\circ}C)$ and a relative humidity of 45%–65%. Light intensity was set below 200 lux at a height of 1 m with a light–dark rhythm of 12 h each (lights on at 7:00 am). Animals were fed a standard diet for mice (complete diet for rats & mice, ssniff Spezialdiäten GmbH, Soest, Germany); water and diet were offered ad libitum and changed weekly. Observation and scoring of the animals was performed daily; humane endpoints were applied if the animals exhibited more than a 20% decrease in body weight, enlarged abdomen, lethargy, or hypothermia. Nestlets (Plexx, Elst, The Netherlands) were offered for cage enrichment. The hygiene monitoring of rodents in the Institute for Laboratory Animal Science is conducted using litter sentinels and is in compliance with the recommendations of FELASA. ¹

2. Construction of the MGS boxes

The boxes for MGS Videotaping have been constructed by our technical facility and made out of polycarbonate plates with a thickness of 5 mm. These observation cuboids have a dimension of 9 cm (l) x 5 cm (b) x 5 cm (h) as mentioned in the protocol of Langford et al.² On the lower front side and on the top of these boxes, holes (5 mm diameter) were drilled for ventilation. Also, this caused the animals to look more often into the camera. The top cover of the boxes was fixated with tape so that the animals could not escape. All long sides of the boxes were covered with a red self-adhesive foil (IFOHA GmbH & Co. KG, Isselburg, Germany #11374) to prevent the animals from seeing each other during the examination.

1. Mahler Convenor M, Berard M, Feinstein R, et al. FELASA recommendations for the health monitoring of mouse, rat, hamster, guinea pig and rabbit colonies in breeding and experimental units. *Laboratory animals* 2014; 48: 178-192. 2014/02/06. DOI: 10.1177/0023677213516312.

2. Langford DJ, Bailey AL, Chanda ML, et al. Coding of facial expressions of pain in the laboratory mouse. *Nature methods* 2010; 7: 447-449. DOI: 10.1038/nmeth.1455.