CORRECTION



## Correction to: Metabotropic group II glutamate receptors in the basolateral amygdala mediate cue-triggered increases in incentive motivation

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In the published article, the figures were incorrectly presented without panel titles. The corrected figures with panel titles included are presented below.

The original article has been corrected.

**Supplementary Information** The online version contains supplementary material available at https://doi.org/10.1007/s00213-021-05959-9.

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Fig. 1 After instrumental and Pavlovian conditioning, rats show significant Pavlovian-to-Instrumental transfer. (a) Timeline and behavioural schematic for Experiment 1. (b) The rate of active lever presses increased over the daily 40-min instrumental training sessions. (c) The rate of water cup entries during the first 10 s of each CS presentation was higher during CS+relative to CS- presentations, and this difference increased over the daily 44-min Pavlovian conditioning sessions. (d) During a test for Pavlovian-to-instrumental transfer, CS+, but not CS- presentations invigorated lever pressing for water reward under extinction conditions. (e) During the test, rats also

entered the water cup significantly more during CS+compared to CS- presentations. In (c), water cup entries are shown as a difference score between responses during the first 10 s of each CS presentation and during the last 10 s of the inter-trial interval (ITI) immediately preceding each CS presentation. In (d-e), water cup entries/lever presses are shown as a difference score between responses during the 2-min CS and during the 2-min ITI immediately preceding each CS presentation. Data are presented as means  $\pm$  SEM (N=16). \* p < 0.05. FR; fixed ratio. VI; variable interval. CS; conditioned stimulus.

30

20

10

0

0

5

Active lever presses/min during test

Training performance

Instrumental Training Lever Presses/min



10

Cup entries/min during test

Testing performance

5

15

Fig. 2 Responding during both instrumental and Pavlovian conditioning predicted later performance during a test for Pavlovian-toinstrumental Transfer. (a) More active lever pressing during the final instrumental training session predicted more active lever pressing at test, specifically during presentations of the water-paired conditioned stimulus (CS+). (b) More water cup entries during CS+presentation on the last Pavlovian session (session 8) predicted more water

10

15

cup entries at test during the CS+. (c) More water cup entries during CS+presentation on the last Pavlovian session also predicted more water cup entries during the first 10 min of the PIT test session, when neither the CS + nor water were presented (i.e., under extinction conditions). N=16. Response rates during the CS are unadjusted for baseline (i.e., during the inter-trial interval, or ITI). CS; conditioned stimulus.

0

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2

Δ

Cup entries/min during test



0

0

Fig. 3 ATimeline and acquisition of instrumental and Pavlovian conditioning in Experiment 2. (a) After implantation of bilateral cannulae targeting the basolateral amygdala (BLA), rats (N=10) received instrumental and Pavlovian conditioning sessions. We then assessed the effects of LY379268 on Pavlovian-to-instrumental transfer. (b) The rate of active-lever presses increased over the daily 40-min

instrumental training sessions. (c) The rate of water cup entries during the first 10 s of each CS presentation increased over the daily 44-min Pavlovian conditioning sessions. Data are presented as means  $\pm$  SEM. \*p < 0.05. FR; fixed ratio. VI; variable interval. CS; conditioned stimulus. ITI; inter-trial interval.

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**Fig. 4** Activation of basolateral amygdala (BLA) mGlu<sub>2/3</sub> receptors with LY379268 abolished CS+triggered increases in both instrumental reward-seeking actions and conditioned approach behaviours. (**a**) Estimated placements of microinjector tips mapped to Rat brain atlas coordinates (Paxinos & Watson, 2007). An example photomicrograph is shown below. (**b**) At baseline ('Vehicle'), presentation of the Pavlovian water cue (CS+) triggered increased responding on the water-associated lever compared to CS- presentation, and intra-BLA LY379268 (3 or 6 µg/hemisphere) abolished this effect. (**c**) LY379268 had no effect on inactive lever presses. (**d**) At 3 µg/hemisphere, LY379268 significantly reduced the magnitude of Pavlovian-

to-instrumental transfer. (e) At baseline ('Vehicle'), rats entered the water cup significantly more often during CS+versus CS- presentations, and intra-BLA LY379268 (3 or 6 µg/hemisphere) abolished this Pavlovian conditioned approach behaviour. (**f**-**g**) LY379268 had no effect on active lever presses or water cup entries during inter-trial intervals (ITI). (**h**) LY379268 did not influence total locomotor activity, or (**i**) locomotor activity during CS presentations at test. In (**d**), and (**f**-**h**), thicker curve in each panel represents group means. Bar graphs present data as means ± SEM (n=10). \* p<0.05. CS; conditioned stimulus.