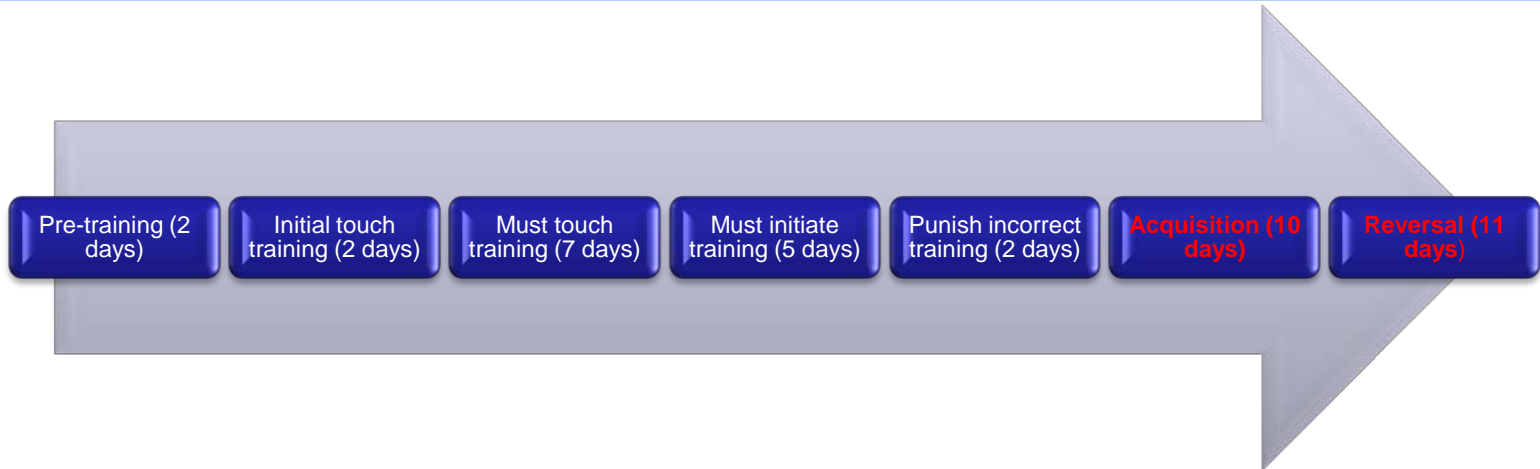




Effects of Compound X in a two stimulus discrimination and reversal learning task using novel touchscreen apparatus

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Training Schedule for 2 stimulus visual discrimination task

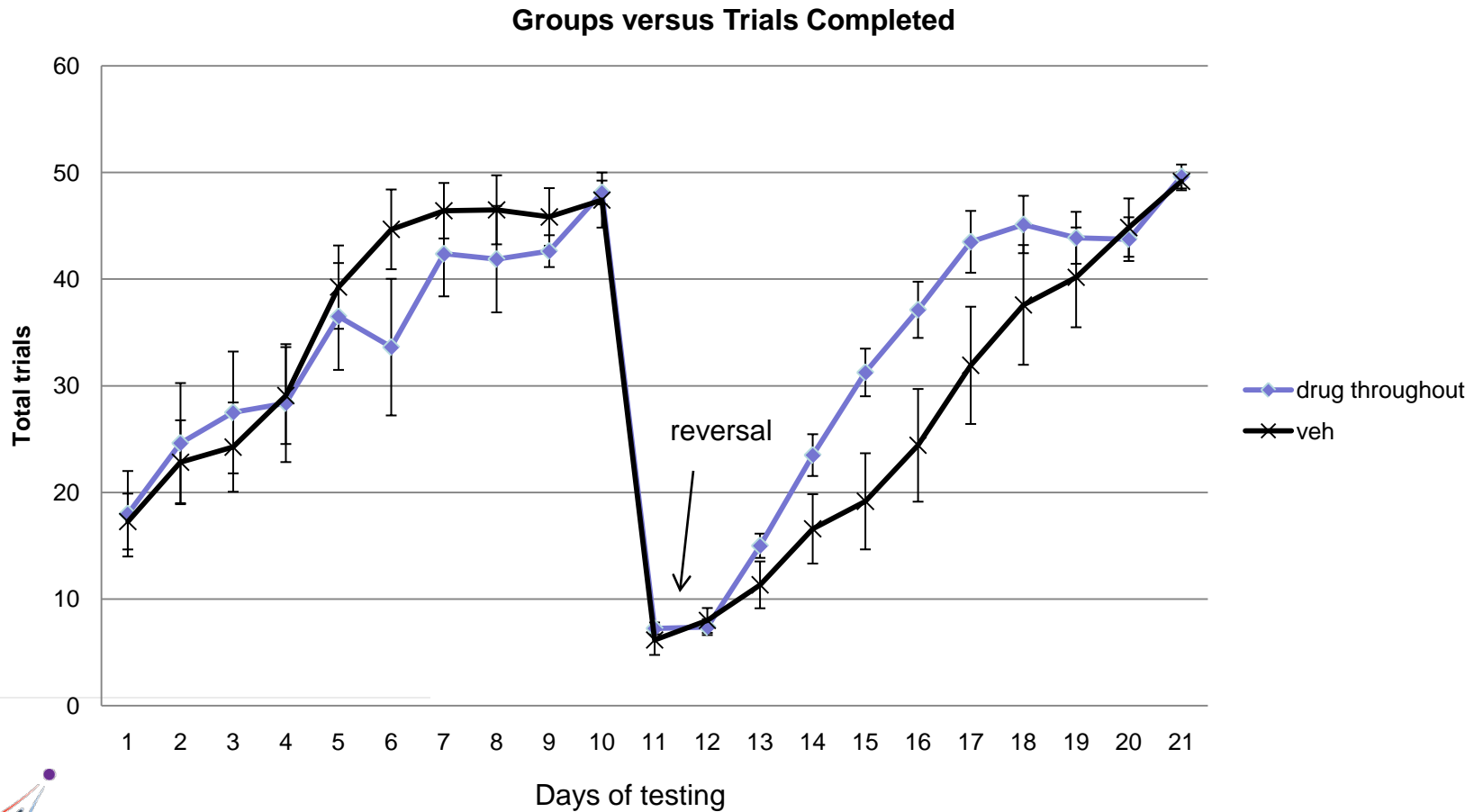


Rats were dosed daily with Compound X throughout acquisition and reversal

7 stages of training / testing

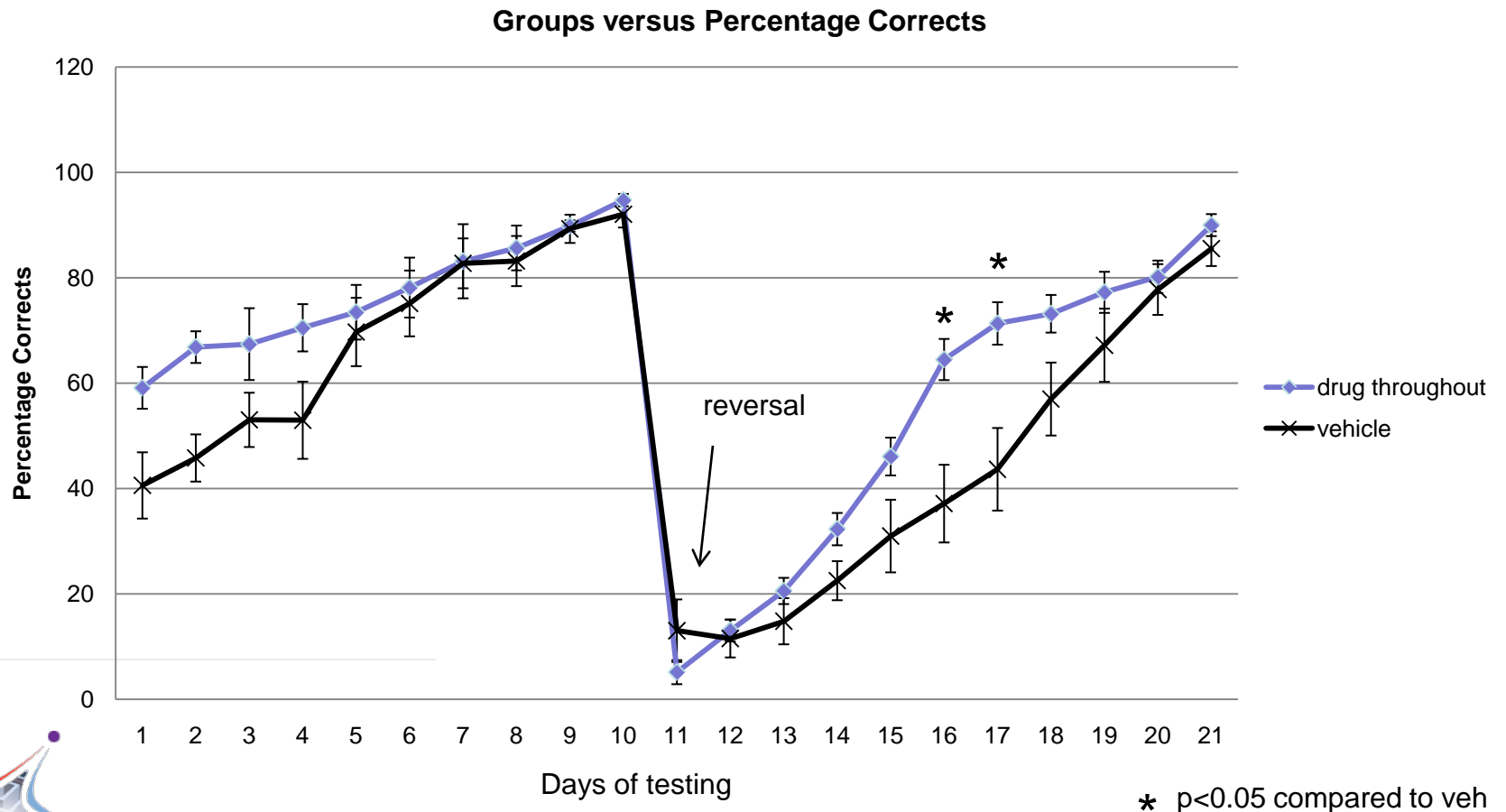
- **Pre-training** – rats learn to associate the food magazine with reward pellets
- **Initial touch** – varying stimuli are presented on the touchscreen and 3 pellets are given in response to a screen touch
- **Must-touch** – food pellets only given in response to a screen touch
- **Must initiate** – rats must nose-poke into the food magazine to start the trial
- **Punish incorrect** – incorrect responses result in a ‘timeout’ and a correction trial given
- **Acquisition** – discrimination between 2 stimuli
- **Reversal** – the correct stimulus is reversed to induce a performance deficit

Effect of Compound X on the total number of trials

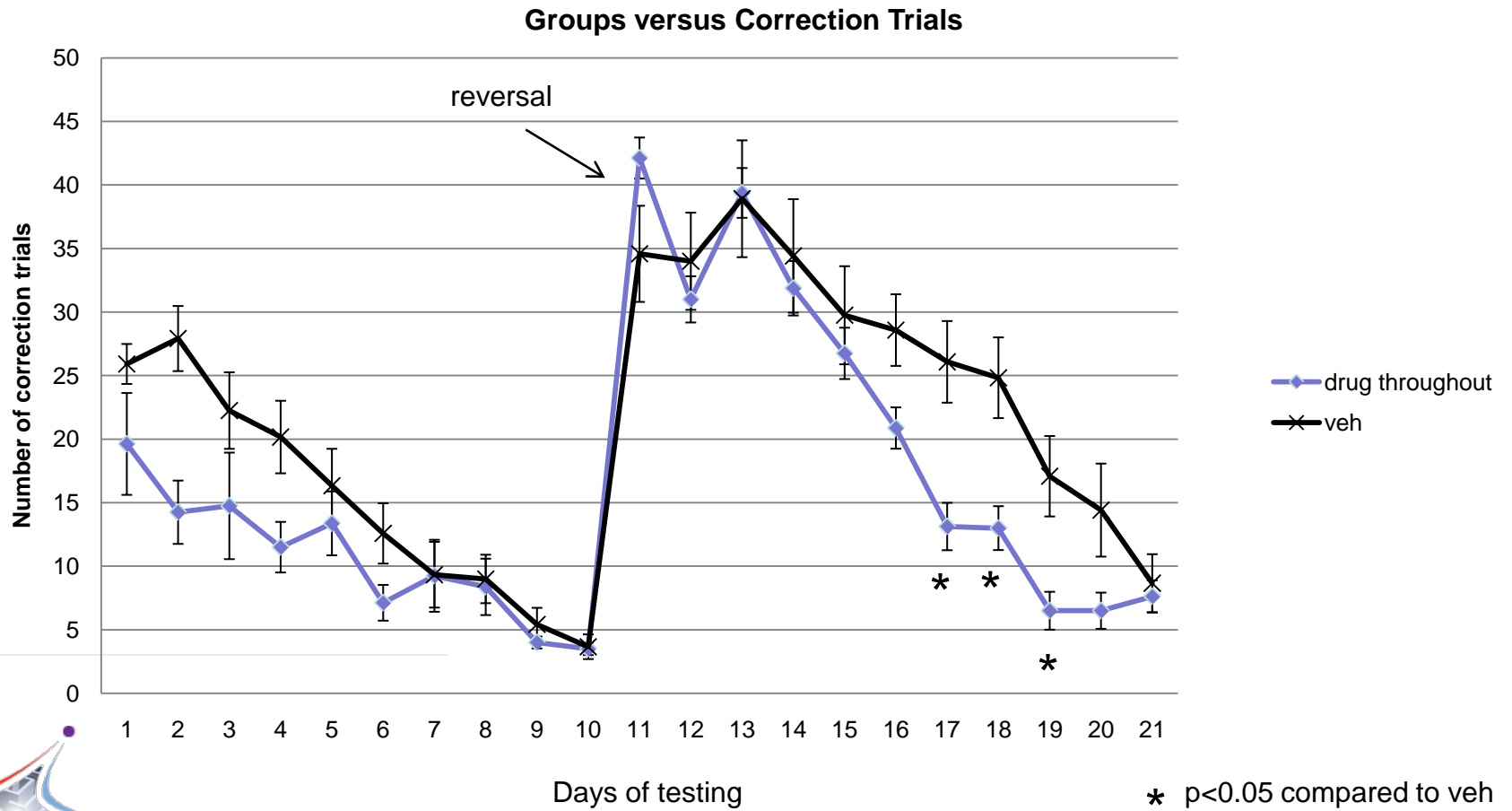


* $p < 0.05$ compared to veh

Effect of Compound X on percentage correct trials



Effect of Compound X on the number of correction trials



Summary

- In this study, rats were shown to successfully acquire a 2 stimulus discrimination task with performance of 80-90% correct responses achieved over 10 days
- A robust deficit in performance was induced by reversal of the stimuli, with effects similar to those reported in the literature (Bussey et al. 2008)
- Although the starting n was 12 /group, several rats were omitted from the data analysis because they failed to reach criterion either during acquisition or reversal, so the final n for statistical analysis was 8-9
- Compound X produced a significant improvement in reversal learning performance when dosed throughout acquisition and reversal, with effects on percentage correct responding and on the number of correction trials
- In house data in this 2-stimulus discrimination and reversal learning task using the touchscreen apparatus is similar to that reported in the literature (Chen et al. 2009) demonstrating that this assay is highly reproducible, and that the task can be used to evaluate the effects of a pro-cognitive compound