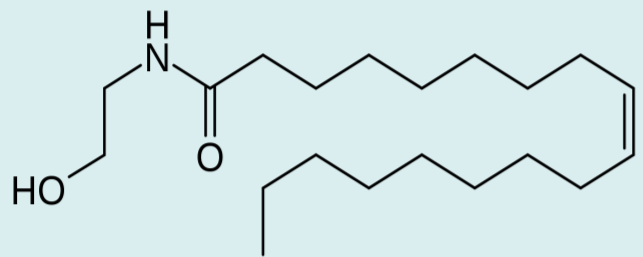


# Contingent oleoylethanolamide treatment alleviates stress-induced anxiety and the increased rewarding properties of cocaine in socially defeated mice.

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**Oleoylethanolamide**

## Effects on depressive-like behavior

OEA administration has been proved as a potent antidepressant when tested with both physical and social stressors. Recently, it also been successful in restoring the behavioral deficits caused by chronic social defeat (Rani et al., 2021).

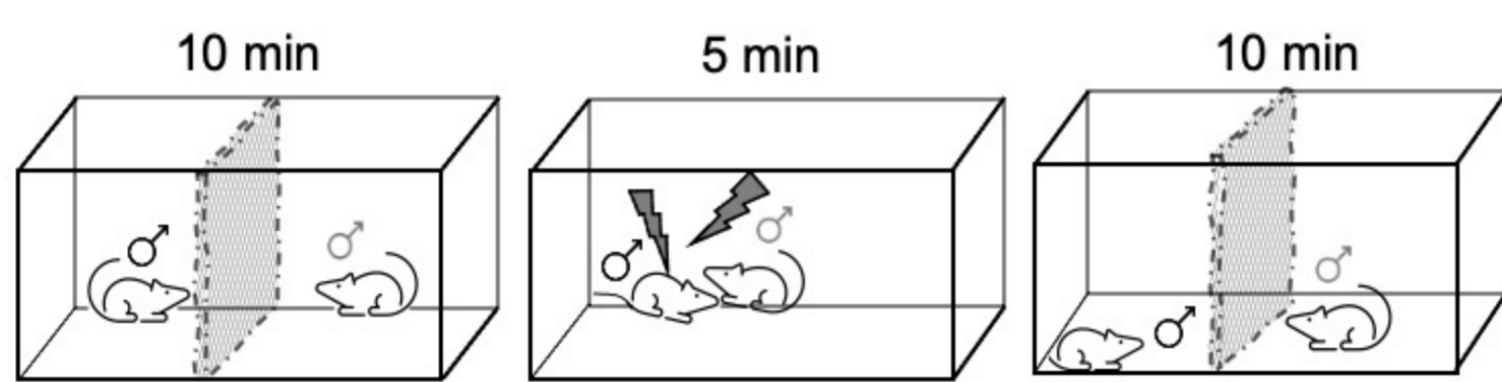
## Effects on the response to drug of abuse

Multiple reports show that OEA administration attenuates the rewarding properties of cocaine and alcohol. In addition, OEA has been shown to reduce proinflammatory signaling induced by alcohol exposure (Orio et al., 2019).

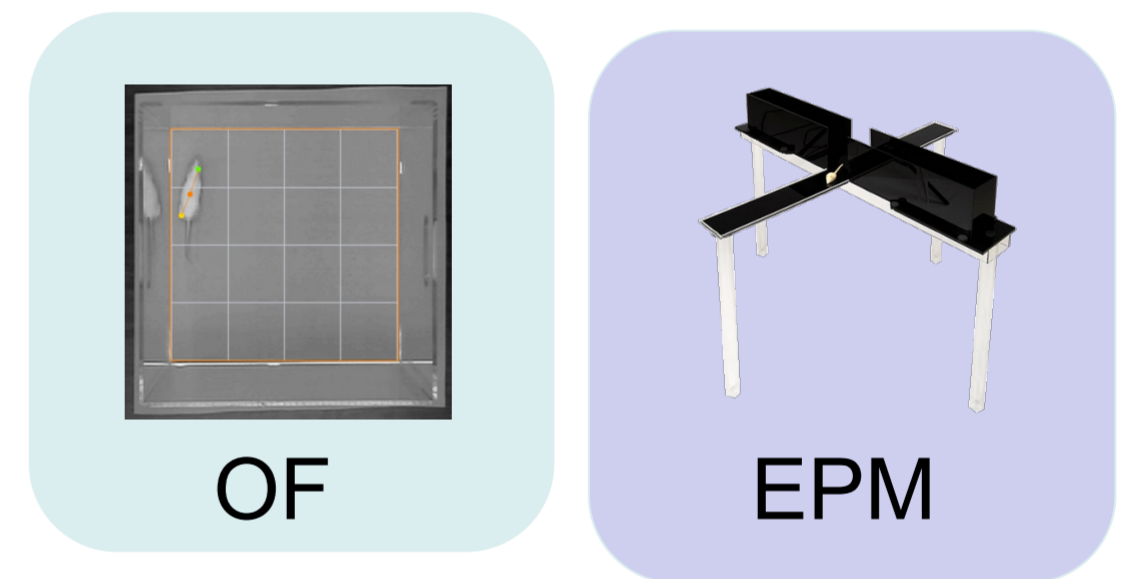
In this study, we aimed to (1) characterize the effects of OEA administration (10mg/kg) on the behavioral deficits caused by SD and (2) test whether OEA administration blocks the increased rewarding properties of cocaine induced by SD.

Experimental conditions

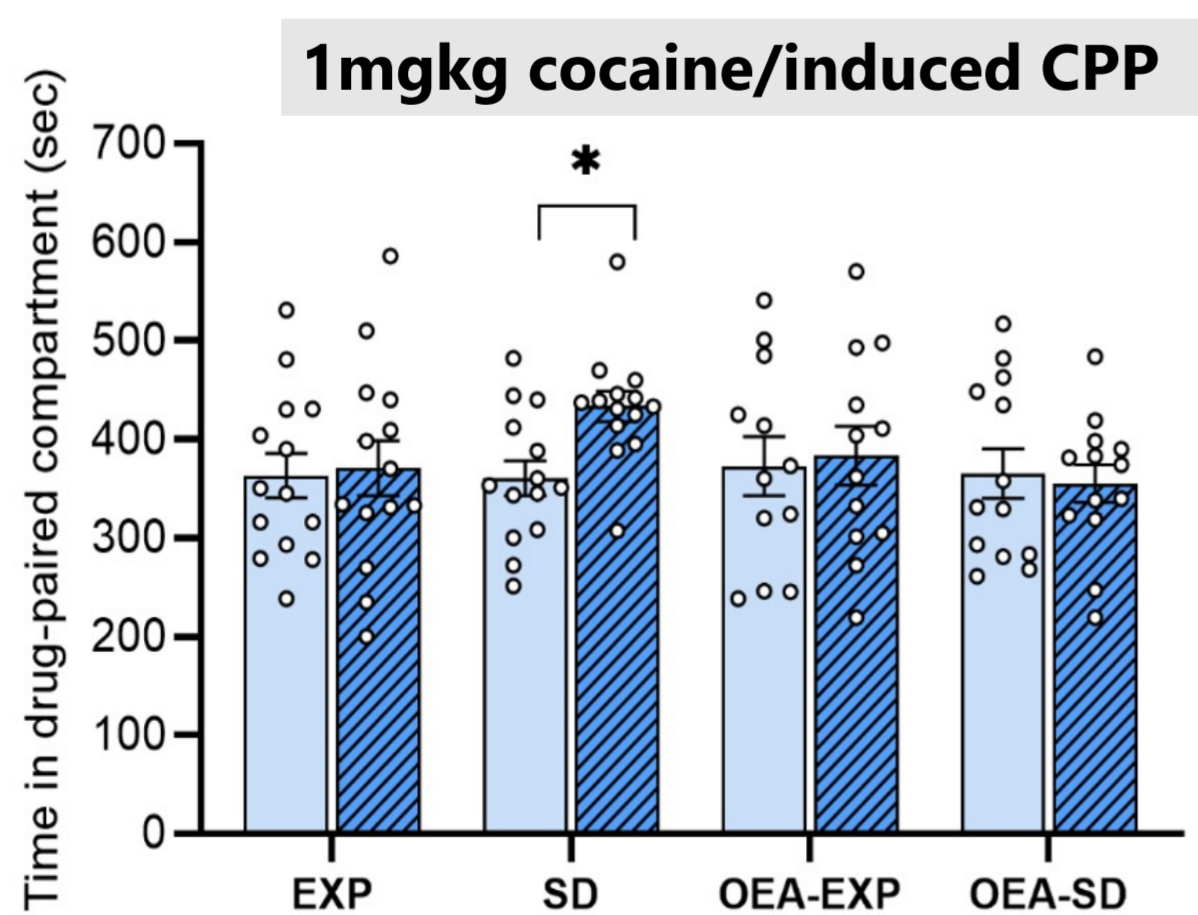
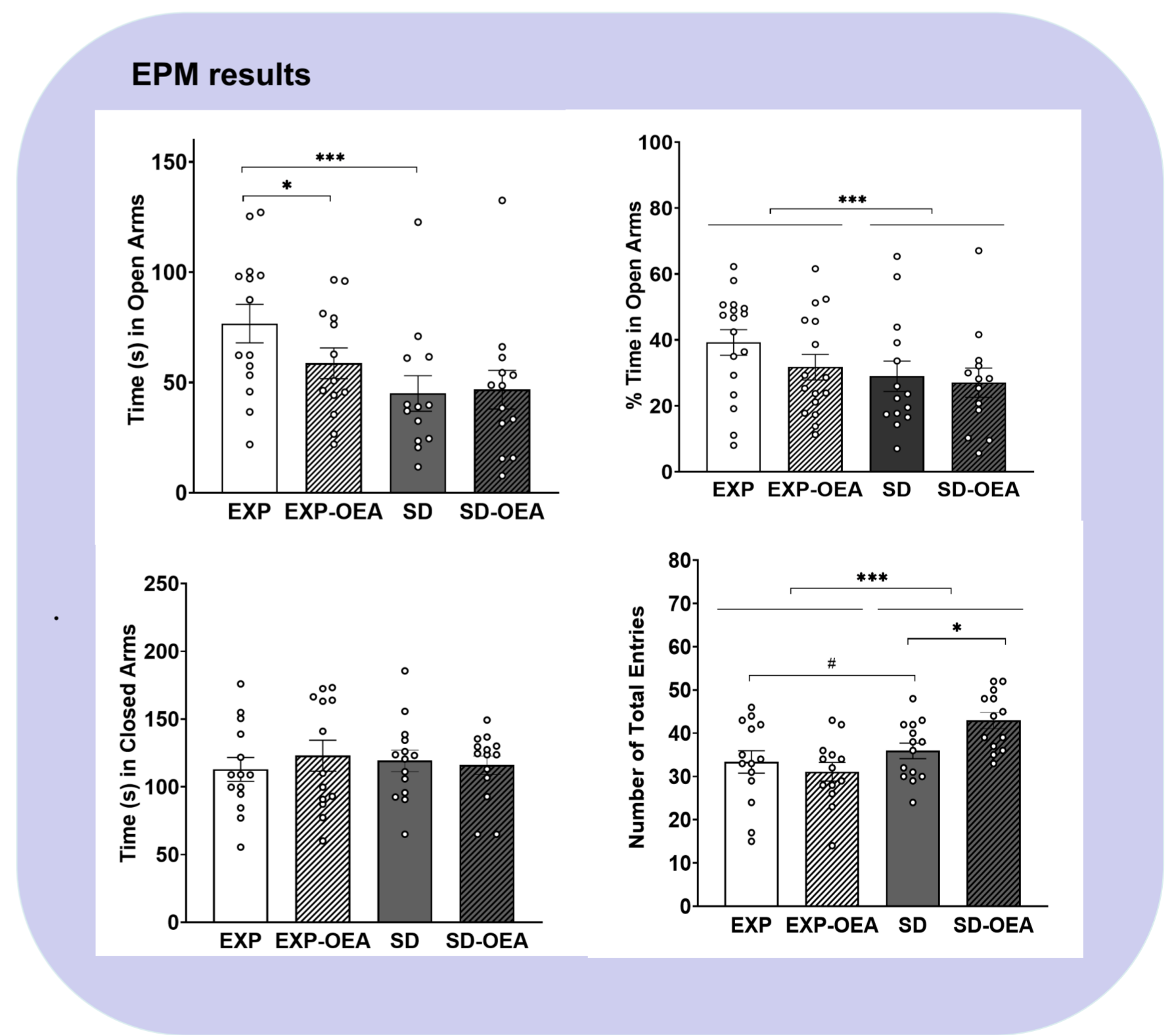
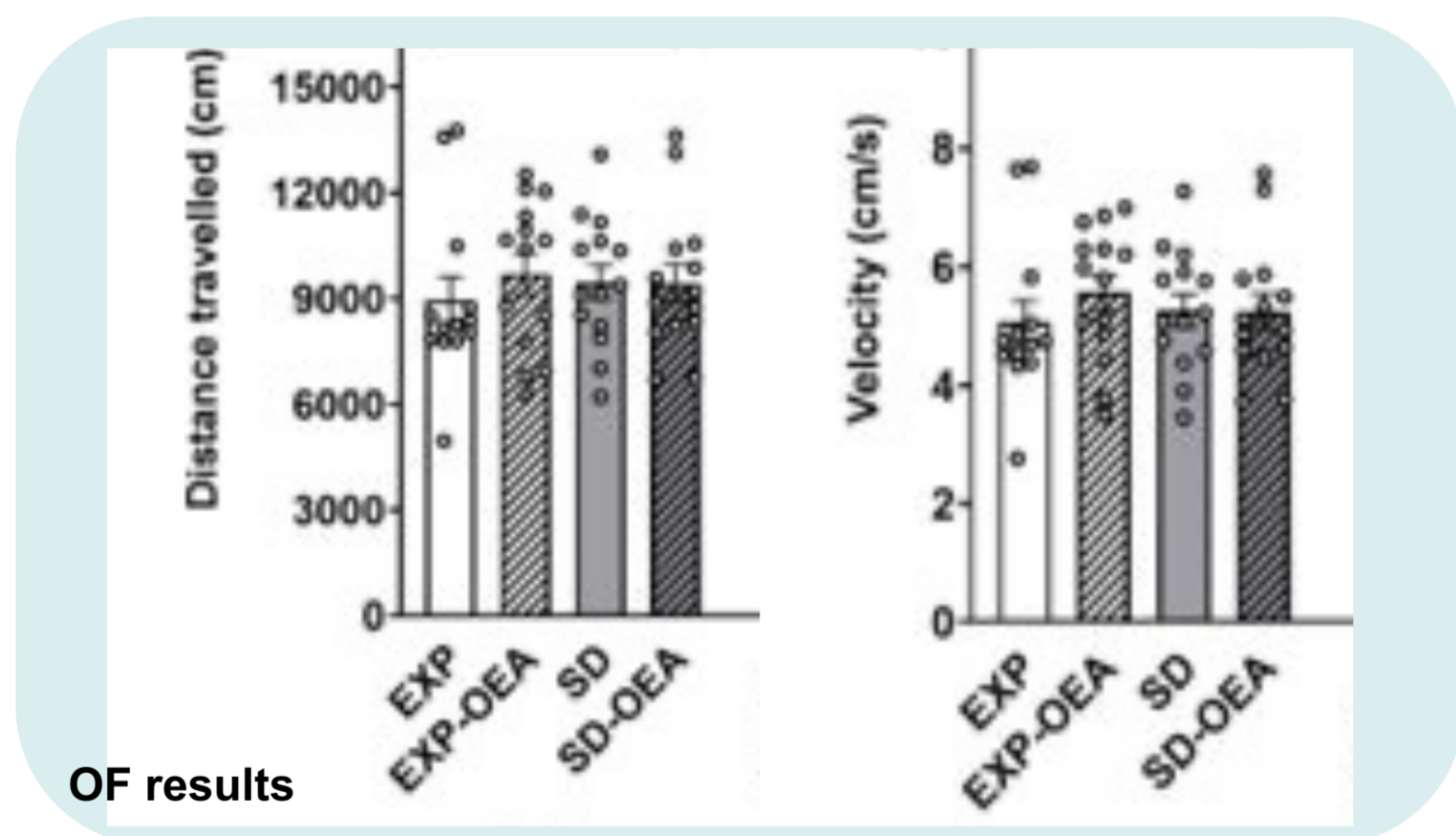
- EXP ♂
- EXP-OEA
- SD
- SD-OEA



Social defeat induces a long-term behavioral phenotype that resembles the anxiety and depressive symptomatology observed in a clinical SUD population.



OEA i.p (10mg/kg)  
10 min before SD



OEA administration prior to SD blocked cocaine-induced CPP in socially defeated mice (SD-OEA).

SD mice spent less time and less percentage of time in open arms, and did less entries compared to EXP mice. Interestingly, we found an effect of the interaction Stress x Treatment; OEA-treated SD mice did more entries than control SD mice.

Our results show that OEA may be a protector agent against the behavioral deficits induced by SD. More generally, OEA could be a suitable treatment for buffering the negative consequences of stress in SUD patients.

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