Midbrain responses in social aversive learning: Neural and neuropharmacological mechanisms

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Introduction

• Individuals in our proximity are central to learn and predict what is dangerous
• Observed outcomes for others update expectations and predictions, and establish motivational states of fear and defense (Olsson & Phelps 2007)
• So far, forebrain mechanisms of social threat learning have been investigated (Debiec & Olsson 2017)

What is the role of midbrain structures, such as the PAG, in translating others’ aversive experiences into our threat responses?

Method

Observational fear conditioning

Olsson & Phelps 2004
Haaker, Golkar, Selbing & Olsson 2017

Classification of direct and social learning

Conjunction of direct and social US

Opioid neuropeptide function during social US processing

Summary

• PAG responses code experiences observed in others in cross-talk with forebrain regions
• An opioid neuropeptide circuit, which central in regulating direct experiences of pain and stress, orchestrates aversive learning from others’ experiences.