Review of: "Phasic firing of dopaminergic neurons in the ventral tegmental area triggers peripheral immune responses"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

Kayama T and colleagues show that phasic photoactivation of VTA dopaminergic neurons increased serum concentrations of IL-2, IL-4, and TNF-α in male mice. Utilizing a female encounter paradigm, they show that this paradigm increased activity of VTA dopaminergic neurons, especially fast activity, in male mice. In addition, the female encounter paradigm led to an increased in serum concentrations of IL-2, effects similar to phasic activation of VTA dopaminergic neurons. Finally, the injection of muscimol and baclofen into the VTA reversed the increase in serum IL-2 mediated by the female encounter paradigm. This study provides direct evidence linking the firing patterns of VTA dopaminergic neurons to peripheral immunity, and further suggest a potential involvement of this process in reward-related behaviors, such as mating.