Implication of dopaminergic modulation in operant reward learning and the induction of compulsive-like feeding behavior in *Aplysia*.

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Supplemental Figure 1. Blockade of En.2-derived monosynaptic activation of B63, B65 and B30 pattern-initiating neurons by Flupenthixol.

(A) In control saline, a single train stimulation (horizontal bar; 10 Hz, 5 s) of En.2 evoked a depolarization of the B63, B65 and B30 cells (lower intracellular traces) which in turn led to repetitive impulse bursts associated with radula motor pattern emissions (upper extracellular traces).

(B-C) In elevated divalent ion ASW, the monosynaptic depolarization of all three cells in response to En.2 stimulation (10 Hz, 5 s) (B) was reduced by the additional presence of Flupenthixol (C).

Supplemental Figure 2. Flupenthixol blocks the increase in B63-B30 electrical coupling induced by *in vitro* operant conditioning.

Group comparisons of mean coupling coefficients between a B63 and an ipsilateral B30 neuron (B30i). The coupling coefficient was significantly higher in the Contingent group as compared to the Non-contingent (\(q = 5.047; p < 0.001\)) and Contingent+Flupenthixol groups (\(q = 4.756; p < 0.001\)). The Non-contingent and Contingent+Flupenthixol B.g. groups were not significantly different (\(q = 2.717\)).
Supplemental Figure 1

A. Control (ASW)

B. High Ca$^{2+}$, Mg$^{2+}$

C. Flu $10^{-5}$M (High Ca$^{2+}$, Mg$^{2+}$)
Supplemental Figure 2

B63-B30i Coupling Coef. (%)

- Non-cont.
- Cont.
- Cont. + Flu

n = 6

N.S.

p < 0.001

p < 0.001