PRESENTATION ABSTRACT

Dopamine Type 1 Receptors, G-Proteins and Cyclic AMP may be Targets of Progesterone's Actions in the Ventral Tegmental Area for Lordosis of Hamsters

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Inhibition of dopamine type 1 receptors (D1), in the ventral tegmental area (VTA), reduces lordosis of naturally-receptive or hormone-primed hamsters. Activation of D1 leads to recruitment of G-proteins and increases in adenylyl cyclase and cyclic AMP. We investigated whether, in the VTA, D1-initiated signaling cascades mediate progesterone (P)'s actions for lordosis. Ovariectomized hamsters received estrogen (10 mg) at hour 0 and P (200 mg) at hour 44. At hour 47.5, hamsters first received VTA infusions of the D1 agonist, SKF38393 (100 ng), or vehicle and then, 30 minutes later, infusions of either the G-protein inhibitor, GDP-b-S (50 mM), the adenylyl cyclase inhibitor, dideoxyadenosine (12 mM), or vehicle. Blocking G-proteins or adenyly cyclase, and thereby cyclic AMP, reduced P- or P plus SKF38393-facilitated lordosis of hamsters. Thus, in the VTA, D1-initiated intracellular signaling cascades may mediate P’s membrane actions for lordosis. Supported by: NSF (IBN98-96263, IBN03-16083) and NIMH (MH06769801).