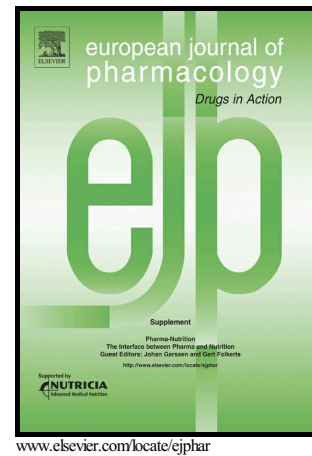


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Role of paraventricular hypothalamic dopaminergic D₁ receptors in food intake regulation of food-deprived rats

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Abstract

Dopaminergic neurons play an important role on central regulatory mechanisms of feeding behavior.

Dopamine receptors are distributed within the hypothalamus and densely localized in the paraventricular hypothalamic nucleus (PVN). From these ideas we postulated that PVN D₁ receptors may play a role in regulating the food intake behavioral process. In this paper, we considered the effects of SKF38393, a D₁ receptor agonist, and the D₁ receptor antagonist (SCH23390), on food intake of conscious rats deprived of food for 24 h. Our findings revealed that intraparaventricular injections of SKF38393 (0.3–5 µg) stimulated food intake behavior in a dose dependent manner.

This stimulatory effect of SKF3833 persisted over 2 h of the monitoring period. The PVN injections of D₁ receptor antagonist were associated with dose-dependent inhibition of food intake. SCH23390 (0.01 µg) was also administered 5 min before intraparaventricular injection of SKF3833. The results showed that SCH23390 suppressed stimulated food intake induced by SKF38393 (1.2 µg). In

conclusion, endogenous dopamine impact PVN D₁ receptors and may be a factor in regulating the food intake behavioral process.

Keywords: SKF3833; SCH23390; Hypothalamic paraventricular nucleus; Food intake; D₁ receptors; Dopamine.

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