Involvement of 5–HT1α Receptor in Marble-Burying Behavior as an Animal Model of Obsessive–Compulsive Disorder

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Abstract: In the present study, we examined the involvement of serotonin (5–hydroxytryptamine, 5-HT) 5–HT1α receptor in marble-burying behavior, which has been considered to be an animal model of obsessive–compulsive disorder (OCD). 8-OH-DPAT, a full 5–HT1α receptor agonist, inhibited marble-burying behavior without affecting the locomotor activity at a dose of 3 mg/kg (i.p.). Buspirone, a partial 5–HT1α receptor agonist, tended to inhibit the marble-burying behavior at a dose of 60 mg/kg (p.o.). Moreover, the inhibition of marble-burying behavior by 8–OH-DPAT was antagonized by WAY-100635 (3 mg/kg, i.p.) or WAY-100135 (10 mg/kg, i.p.), 5–HT1α receptor antagonists. These findings suggest that 5–HT1α receptor may therefore play an important role in marble-burying behavior.

Key words: Marble-burying behavior, Obsessive-compulsive disorder, 5–HT1α receptor, 8–OH-DPAT