분류번호	Ⅲ-P-14

NMDA Receptor Antagonists Enhance 5-HT Receptor-mediated Behavior, Head-Twitch Response, in Mice

Hack-Seang Kim, In-Sook Park, Myeon-Woo Chung, Young-Rey Son and Woo-Kyu Park*

College of Pharmacy, Chungbuk National University, Cheongju 361-763, Korea
** Korea Research Institute of Chemical Technology, Taejon 305-600, Korea*

The purpose of this study was to determine the behavioral interaction between glutamatergic and serotonergic receptors. In the present study, both the competitive (AP-5 and D-CPP) and the noncompetitive (MK-801, ketamine, dextrorphan and dextromethorphan) N-methyl-D-aspartate (NMDA) receptor antagonists markedly enhanced 5-HT(5-hydroxytryptamine)-induced selective serotonergic behavior, head-twitch response (HTR), in mice. These results suggest that the glutamatergic neurotransmission may modulate serotonergic function at the 5-HT receptor. The precise relationship between glutamatergic and serotonergic system is as yet undefined. However, these are the first data available regarding glutamatergic modulation of serotonergic function at the 5-HT receptor in intact mice, and the present results support the notion that the NMDA receptors may play important roles in the glutamatergic modulation of serotonergic function at the 5-HT receptor.