The rewarding effects of 2C-C and 2C-P, the new designer drugs of the 2C family, in rodents

Young-Jung Kim, Shi-Xun Ma, Kwang-Hyun Hur, Seok-Yong Lee, Choon-Gon Jang

Sungkyunkwan University, Korea

2C (2C-x) is a general name for the family of psychedelic phenethylamines containing methoxy groups on the 2 and 5 positions of a benzene ring and are widely used recreationally. However, the rewarding effects of 2C family have not been studied yet. Especially abuse of 2C-C [1-(4-Chloro-2,5-dimethoxyphenyl)-2-aminoethane] and 2C-P [2-(2,5-Dimethoxy-4-propylphenyl)ethanamine] has increased rapidly and regulation of usage has been initiated globally. To promote public health and prevent abuse of 2C drugs, it is essential that we study addictive potential of 2C-C and 2C-P. In the present study, to investigate the rewarding effects of 2C-C and 2C-P, we injected 2C-C 1, 3, and 10 mg/kg i.p. or 2C-P 1, 3, and 10 mg/kg i.p. to each C57BL/6J mice. We found that 2C-C and 2C-P increased conditioned place preference in a dose dependent manner in mice. In addition, we infused 2C-C 0.03, 0.1, and 0.3 mg/kg/infusion i.v. or 2C-P 0.01, 0.03, and 0.1 mg/kg/infusion i.v. in left jugular vein of each Sprague Dawley (SD) rats to test self-administration. 2C-C and 2C-P increased self-administration in rats. Taken together, these results suggest that drugs of the 2C family, 2C-C and 2C-P has rewarding effects in rodents. Also, further study is required in order to clarify 2C-C and 2C-P’s precise molecular mechanisms on rewarding effects.