

# “緑の香り”の主要成分である(Z)-3-ヘキセノールによる 高架式十字迷路テストにおけるマウス不安関連行動および その脳内アミン、アミン代謝物に対する影響

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*Behavioral Brain Research*, **166** (2), 247-252 (2006)

## Effects of (Z)-3-hexenol, a major component of green odor, on anxiety-related behavior of the mouse in an elevated plus-maze test and biogenic amines and their metabolites in the brain.

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**ABSTRACT** : Evaluation of anxiety-related animal behavior was performed by measuring the percent of time spent on the open arms and the percent of open-arm entries as conventional anxiety indices. The number of times displaying risk-assessment from a closed arm was also measured as an ethological anxiety index. Diazepam, an anxiolytic agent, enhanced the percent of time spent on the open arms and the percent of open-arm entries. The number of times displaying risk-assessment was not affected by diazepam in the present study. The percent of time on the open arms were depressed, and the number of times displaying risk-assessment were stimulated by 1-(3-trifluoromethylphenyl)piperazine (TFMPP), indicating that TFMPP acts as an anxiogenic agent. (Z)-3-Hexenol revealed anxiolytic activity and increased the percent of time spent on the open arms and decreased the number of times displaying risk-assessment. In the neurochemical study, (Z)-3-hexenol significantly increased the 5-HT content without affecting the 5-HIAA content or the 5-HT turnover rate in the brain cortex or hippocampus. Changes in serotonergic activity in the cortex and hippocampus were suggested to be involved in the anxiolytic effect of (Z)-3-hexenol observed in the elevated plus-maze test.

抄録 高架式十字迷路テストにおいて、抗不安薬であるジアゼパムは、不安関連行動の指標を低下させたが、危険評価関連行動の指標には影響しなかった。不安惹起物質とされるTFMPPは、本実験系において不安関連行動および危険評価関連行動を促進した。“緑の香り”の主成分である(Z)-3-hexenolの吸入により、マウスの不安関連行動は低下し、危険評価関連高度も低下した。(Z)-3-hexenolの吸入により、マウス大脳皮質、海馬において5-HT濃度の有意な上昇が認められたが、5-HIAA濃度および5-HT代謝活性には変化がなかった。(Z)-3-hexenolの吸入による抗不安作用には大脳皮質、海馬における5-HT神経活性の変化が関与していることが示唆された。