

# 学 位 論 文 の 要 旨

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<p>主論文の題名</p> <p><b>Molecular-biological analysis of the effect of methamphetamine on the heart in restrained mice</b></p> <p>主論文の要旨</p> <p>In order to investigate the interaction in the heart between the administration of methamphetamine (MAP) and restraint of the body following it, we administrated MAP intraperitoneally to mice and restrained them, and then determined the level of mRNA expression of 22 genes in the heart using quantitative RT-PCR method. The mRNA expressions of Nfkbiz, Nr4a1 and Dusp1 changed significantly after the administration of MAP, suggesting the induction of an inflammatory condition such as damage to the myocardium. Moreover, the serum concentrations of inflammatory cytokines such as tumor necrosis factor -<math>\alpha</math>, interleukin (IL) -1<math>\beta</math> and IL-6 were significantly increased by the administration of MAP. On the other hand, the mRNA expressions of Rgs2 and Rasd1 were changed by both the administration of MAP and body restraint without interaction, which indicated that these insults affected the circulatory system additively or synergistically. From these results, it is likely that the administration of MAP, followed by body restraint, might cause acute myocardial damage due to the direct myocardial toxic effect of MAP, myocardial hypoxia and/or severe hypertension, which is one of the mechanisms for sudden death in MAP abusers who were restrained due to their excited state.</p>			

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