

분류번호	II-P-51
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제 목	Studies on Digitalis Receptor Desensitization in Rat Ventricle
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[³H]Ouabain binding parameters(K_D and B_{max}) in homogenates prepared from control rat ventricular strip and Langendorff preparations which were not previously exposed to ouabain were compared to those in homogenates from ventricular strip and Langendorff preparations that had been first exposed to a complete ouabain dose-response curve(10^{-7} M to 10^{-4} M). In rat ventricular strips and Langendorff perfused rat heart preparations, cumulative dose-response curves of ouabain revealed biphasic positive inotropic effects, a "low-dose" and a "high-dose" effect with ED_{50} values of $0.5\mu\text{M}$ and $35\mu\text{M}$ ouabain, respectively. The "low-dose" effect in rat ventricular strips disappeared or was diminished significantly when the ouabain dose-response curve was repeated after the washout of the effects of the first curve, whereas the maximal "high-dose" effect was identical in both exposures to ouabain. However, there was no change in the "low-dose" effects in both sets of the Langendorff perfused hearts. The contractile activity of the pre-exposed strips did not indicate the presence of residual ouabain since their basal contractile force was decreased 10% compared to initial control. [³H]Ouabain binding parameters, K_D and B_{max} , were not changed comparing homogenate of control ventricular strips with that of strips pre-exposed to ouabain. These results suggest that digitalis receptor desensitization in the rat ventricular strip may be due to the change of post-receptor events induced by ouabain binding to a high affinity site(α_2 isoform).