

제 목	Altered Cardiac Na ⁺ ,K ⁺ -ATPase Activity in Prehypertensive Spontaneously Hypertensive Rat
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<p>Na⁺,K⁺-ATPase activity, Na⁺-dependent phosphorylation, and [³H]ouabain binding in sarcolemma prepared from 4 week old spontaneously hypertensive rat(SHR) ventricles were compared to the same parameters in sarcolemma from age matched normotensive Wistar-Kyoto(WKY) rat ventricles to examine whether the reduced myocardial Na⁺-pump activity in SHR is an inherited enzymatic defect or a second phenomenon due to sustained hypertension. The total body weights, ventricular weights, and blood pressures were the same for SHR and WKY. No significant differences in sarcolemmal protein content and protein recovery were noted between the two groups. Sarcolemma isolated from SHR ventricles showed significantly less Na⁺,K⁺-ATPase activity and number of phosphorylation sites when compared to sarcolemma from the WKY ventricles. Equilibrium binding of [³H]ouabain and the turnover number of myocardial Na⁺,K⁺-ATPase, however, were the same for both groups. These results indicate that the low affinity(α, or α_1) isoform for ouabain is reduced in SHR compared to WKY but that the high affinity(α+, or α_2) isoform is the same in ventricles of SHR and WKY. The reduced amount of α_1 isoform of the Na⁺,K⁺-ATPase in prehypertensive SHR ventricles may play some role in the development of hypertension.</p>	