

## The Effect of Statin on KLOTHO, Anti-aging Gene, Expression in Normal and Cyclosporine-treated Mice Kidney

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### The Effect of Statin on KLOTHO, Anti-aging Gene, Expression in Normal and Cyclosporine-treated Mice Kidney

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**Background :** Statin has renoprotective effect against oxidative stress nephropathy. This study was performed to investigate whether statin is effective to preserve the expression of the Klotho, anti-aging gene, in CsA-treated mice kidney.

**Methods :** Two separate studies were performed. First, the Klotho expression of PRVT was evaluated with four different doses (5, 10, 20 and 40 mg/kg in the drinking water). Second, mice were maintained on a low-salt diet (0.01% sodium) and treated daily for 1 or 4 wk with vehicle (olive oil; 1 ml/kg sc), CsA (30 mg/kg sc), or both CsA and PRVT (10mg/kg in the drinking water). The expression of Klotho protein and mRNA were compared for different treatment groups. Development of nephrotoxicity caused by CsA was evaluated with renal function and tubulointerstitial fibrosis. Anti-inflammatory effects of PRVT were studied by evaluating the concentrations of the C-reactive protein (CRP). In addition, serum lipid levels, histopathology (arteriolopathy and tubulointerstitial fibrosis) were evaluated.

**Results :** In first study, PRVT treatment increased Klotho mRNA and protein in normal mouse kidney in a dose-dependent manner. In second study, CsA treatment significantly decreased the expression of renal Klotho protein and mRNA compared with the VH and PRVT treated alone groups. But treatment of PRVT (10 mg/kg PRVT) with CsA group didn't increase the Klotho expression compared with the CsA group.

**Conclusions :** Statin treatment was effective in increasing KLOTHO expression normal mice kidney but did not increase KLOTHO expression in CsA-treated mice kidney. Our findings suggest that higher dose of statin may be needed to protect KLOTHO expression in CsA-injured renal injury in mice.

**Key Words :** 사이클로스포린, 스타틴, 클로쏘  
Cyclosporin, Statin, Klotho