

## 사이클로스포린에 의한 신손상시 Nestin 양성세포의 신장 내 침윤 양상

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**Purpose :** Stem cells or progenitor cells are involved in repair process in injured kidney. Nestin is a marker of neuronal stem cells, and nestin-expressing cells are involved in repair process in neural and myocardial injury. Our study was performed to evaluate the nestin-expressing cells in cyclosporine (CsA)-induced renal injury.

**Methods :** Sprague-Dawley rats were used. Chronic CsA nephropathy was induced by administering CsA (15 mg/kg per day) on a low salt diet (0.05%), and rats were sacrificed at 1 and 4 weeks. Nestin-expressing cells were detected with immunohistochemistry with mouse monoclonal anti-nestin antibody, and characterization of nestin-positive cells were detected with double labeling with glial fibrillary acidic protein (GFAP), vimentin and marker of dendritic cells. Stromal cell-derived factor-1 (SDF-1) and CXCR4 which is well-known chemoattractant and its ligand was also studied.

**Results :** Compared to normal kidneys, nestin-expressing cells were significantly increased in CsA-treated rat kidneys, and this increase was more evident at 4 weeks compared with 1 week-treated rat kidney. Site of nestin-expressing cells was corresponded to tubulointerstitial fibrosis area. SDF-1 and CXCR4 expression was significantly increased in CsA-treated rat kidney compared with the VH group.

**Conclusion :** Our study demonstrate that CsA-induced renal injury recruits nestin-expressing cells in kidney by upregulating SDF-1 and CXCR4, and these cells may be involved in repair process in chronic CsA nephropathy.