# Il25 and Il23 on Diabetic Mice

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## ABSTRACT

### BACKGROUND
Type1 diabetes (T1D) is a complex chronic autoimmune inflammatory disease in which induced cytokine production creates dynamic environments for evolution and activity of effector as well as regulatory cells.Low-dose IL- 2 has been applied for treatment recent-onset T1D in NOD mice.Different IL-2 formulations, for instance nanoparticle encapsulation, have been implicated to improve the therapeutic utility of low dose IL-2 to achieve precise suppression ofpathological immune responses.

### OBJECTIVES:
So, the current study intended to evaluate the effect of ultra low dose rh IL-2 therapy on the inflammatory process in multiple low dose sreptozotocin (MLD STZ) induced T1D as well as the influence of chitosan nanosphere encapsulation on the proposed effect.

### METHODS:
Male inbreed Balb/c mice were divided into 5 groups; Normal (Normal mice), T1D: (T1D induced by MLD-STZ), T1D (Nano): T1D mice treated with free CS-TPP-NPs, T1D (rIL-2): T1D mice treated with free rhIL-2, and T1D (rIL-2/Nano):T1D mice treated with rhIL-2 encapsulated into CS-TPP-NPs. Levels of IL-23 and IL-25.

### RESULTS:
showed that both rhIL-2 and rhIL-2/CSNPs significantly decreased IL-23 as compared to corresponding group in T1D with maximum decrease at day 21 post treatment.Both rhIL-2 and rhIL-2/CSNPs significantly decreased IL-25 at days 7 and 14. All through the three time intervals, IL-25 remained significantly higher in rhIL-2/ CSNPs than in rhIL-2.

### CONCLUSIONS:
Ultra-low dose rhIL-2 ameliorated the diabetic state at day 7. rhIL-2/CSNP is more prone to induce an anti-inflammatory stat. The anti- diabetic effect of rhIL-2 or rhIL-2/CS-NPs is not directly dependent on alterations in IL-23 and IL-25 production.



### KEYWORDS:
Interleukin-2, Interleukin-23, Interleukin-25, Type1 diabetes.


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