[1]Tengfei Xu, [2]Wei Liu. *[1]The First Affiliated Hospital of Harbin Medical University; [2]The First Affiliated Hospital of Harbin Medical University*

Objectives To evaluate the role of IL-21 in promoting CD8 T cell mediated cardiac injury in myocarditis.

Methods To evaluate the role of IL-21 in promoting CD8 T cell mediated cardiac injury in myocarditis, C57BL/6 and IL-21RKO mice were infected with CVB3. HE staining was used to evaluate history pathology. Differences between groups were determined by Wilcoxon Ranked Score.

Results These data demonstrate that IL-21 signalling directly in the CD8 cell population is required for CVB3-induced myocarditis.

Conclusions This study demonstrates that IL-21 is important in CVB3 immunopathogenicity and that the cytokine effect is mediated exclusively through promotion of CD8 activation and/or survival. IL-21 has been shown to be protective in several viral diseases, but in the previously published studies, the IL-21 effect has been primarily directed toward enhancing elimination of the virus. In contrast, this study demonstrates that IL-21 has no detectable effect on host control of coxsackievirus B3 concentrations in the heart. Although IL-21 has immunomodulatory effects on multiple lymphoid cell subsets, including CD4, CD8, B cells and NK cells, in the CVB3 myocarditis model, IL-21 signalling deficiency selectively in the CD8 T cell population provides the same level of myocarditis protection as observed in IL-21RKO mice lacking IL-21 signal transduction in all cell subpopulations.

GW23-e2039 **IL-21R EXPRESSION ON CD8+T CELLS PROMOTES CD8+T CELL ACTIVATION IN COXSACKIEVIRUS B3 INDUCED MYOCARDITIS**

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