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Multiple mycobacterial antigen recognition of Sarcoidosis BAL

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Abstract Body

Introduction: Sarcoidosis is a multisystem granulomatous disease of unknown etiology. Several reports from independent groups support mycobacterial antigens having a role in sarcoidosis pathogenesis. However, one of the opposing theories is that sarcoidosis is caused by a single, poorly degradable antigen. To identify other microbial targets of the adaptive immune response, we tested the ability of CD4+ and CD8+ T cells to recognize multiple mycobacterial antigens. **Methods:** Fifty-five subjects were enrolled in this study: 31 sarcoidosis patients, nine non-tuberculosis mycobacterial (NTM) infection controls, and 15 PPD- controls. Using flow cytometry, we assessed for Th1 immune responses to ESAT-6, katG, Ag85A, sodA, and HSP. **Results:** Twenty-two of the 31 sarcoidosis BAL samples produced a CD4+ response to at least one of ESAT-6, katG, Ag85A, sodA, or HSP, compared to two of 15 PPD- controls ($p=0.03$) and five of nine NTM controls (not significant), while eighteen of the 31 sarcoidosis subjects tested produced a CD8+ response to at least one of the mycobacterial antigens compared to two of 15 PPD- controls ($p=0.04$) and three of nine NTM controls (not significant). Of those who displayed a CD4+ T cell response, 16 sarcoidosis subjects, two PPD- controls and four NTM controls responded to multiple antigens and for those with CD8+ T cell responses, thirteen sarcoidosis, two PPD- controls, and three NTM controls demonstrated responses to multiple antigens. **Conclusions:** Together these results demonstrate that sarcoidosis CD4+ and CD8+ T cells respond to multiple mycobacterial antigens and support a role for mycobacterial antigens in sarcoidosis disease pathogenesis. Furthermore, this data suggests that regardless of HLA type, multiple mycobacterial antigens are recognized by sarcoidosis T cells.

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