

[Close Window](#)

ATS 2009 - San Diego International Conference

Abstract Number: 1662**Contact/Presenting Author:** Ali A. Kanchwala**Department/Institution:** Dept. of Internal Medicine, Div. of Pulmonary and Critical Care and Sleep Medicine, East Carolina university**Address:** 3E-149 Brody School of Medicine, 600 Moye Blvd**City/State/Zip/Country:** Greenville, NC, 27834**Phone:** 315-575-6035 **Fax:** **E-mail:** kanchwalaa@ecu.edu**ATS member:** Yes **Student or in training:** Yes**Funding Source:** HL077652.**Abstract Category:** 09.36 - Sarcoidosis: Mechanisms**Presentation format:** Either Poster or Oral[Preview Disclosure](#)**Travel Award:** Yes**Publication of email address:** No**I confirm that all authors listed on this abstract have knowledge of the abstract submission:** Yes**Title:** Cathelicidin Deficiency and Its Association with Disease Severity in Patients with SarcoidosisA. A. Kanchwala¹, B. P. Barna¹, D. A. Culver², A. Malur¹, S. Abraham², I. Marshall¹, M. S. Kavuru¹ and M.J. Thomassen¹. ¹East Carolina University and ²Cleveland Clinic Foundation.

Recent evidence for the antimicrobial peptide, cathelicidin, suggests its critical role in innate immune defenses of alveolar macrophages. In sarcoidosis, a chronic granulomatous disease of unknown etiology, there is overproduction of pro-inflammatory cytokines, such as interferon-gamma (IFN γ). Previous studies have reported high serum circulating levels of active vitamin D (vitD) in sarcoidosis, and also shown that IFN γ stimulates macrophage production of active vitD, a potent cathelicidin inducer. We hypothesized an increase in cathelicidin expression in bronchoalveolar lavage (BAL) cells in sarcoidosis. BAL cells from patients with biopsy proven sarcoidosis (n=26), and healthy controls (n=18) were analyzed by quantitative PCR to assess mRNA expression for cathelicidin and the vitD receptor (VDR). Sarcoidosis was classified as severe (requiring systemic treatment), or non-severe (never requiring treatment). Alveolar macrophages from sarcoidosis patients and healthy controls were cultured with vitD, *in vitro*, to determine cathelicidin mRNA responses. Compared to healthy controls, cathelicidin mRNA expression was 30% lower in BAL specimens of patients with severe sarcoidosis (n=14, p<0.002); and 14% lower in patients with non-severe disease (n=12, p=0.037). VDR mRNA expression was unchanged in both groups of patients as compared to healthy controls. *In vitro* studies indicated that vitD increased cathelicidin mRNA expression in both patients (n=4), and healthy controls (n=4). Our results indicate that mRNA expression of cathelicidin in the BAL cells of sarcoidosis patients is deficient and directly correlates with disease severity. This occurred despite normal VDR mRNA expression and *in vitro* response to vitD. The results suggest that localized repressive mechanisms may exist to decrease cathelicidin mRNA expression in BAL cells of patients regardless of elevated systemic circulating vitD levels.