European Respiratory Society
Annual Congress 2012

Abstract Number: 6004

Publication Number: 3119

Abstract Group: 5.3. Allergy and Immunology

Keywords: no keyword selected

Title: LSC 2012 abstract – FOXO transcription factors regulate innate immune mechanisms in respiratory epithelial cells during bacterial infection

Christoph 600031 Beisswenger christoph.beisswenger@uks.eu [1], Frederik 600032 Seiler [1], Philipp 600033 Lepper [1], Robert 600034 Bals [1] and Christian 600035 Herr [1]. [1] Department of Internal Medicine V, Saarland University Hospital, Homburg/Saar, Germany .

Body: Bacterial pathogens are a leading cause of lung infections and contribute to acute exacerbations in patients with respiratory tract diseases. The innate immune system of the lung controls and prevents colonization of the respiratory tract with bacterial pathogens. Here, we show that FOXO transcription factors regulate innate immune mechanism of respiratory epithelial cells in response to bacterial pathogens such as Haemophilus influenzae and Pseudomoas aeruginosa. Infection with bacterial pathogens led to the activation of FOXO transcription factors in respiratory epithelial cells in vivo and in vitro. siRNA mediated knock down of FOXO3 in bronchial epithelial cells resulted in reduced expression of factors of the innate immune system such as antimicrobial peptides and factors involved in a proinflammatory response. In addition, FOXO3 plays a role in the internalization of bacterial pathogens. These data show that FOXO transcription factors are involved in the cellular response to bacterial stimuli and have a central role in regulating innate immune functions of respiratory epithelial cells.