

# O-BBD3-013

## *Bacteriology and Bacterial Diseases*

### *ACTINOBACILLUS*

#### **Role of T cells in the immune-pathogenesis of porcine contagious pleuropneumonia**

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**Introduction:** Porcine contagious pleuropneumonia caused by *Actinobacillus pleuropneumoniae* (APP) remains one of the major causes of poor growth performance in pig herds. After recovering from the acute phase, pigs often become carriers harbouring the pathogen in tonsils, nares and chronic lung lesions. While most of the literature focuses on the role of the humoral response in attenuating the occurrence of acute symptoms, the porcine T-cell response to APP has been poorly characterised so far. Therefore, the presented study aimed at providing an overview of the host immune response during persistent infection with particular emphasis on cytokine production by APP-specific T cells.

**Materials and Methods:** Twenty pigs were intranasally inoculated with  $2 \times 10^4$  CFU/ml of APP serotype 2, by means of an atomization mucosal device to mimic the natural infection. Ten pigs were humanely euthanized at the acute phase (6-10 dpi) and the remaining ten at the chronic phase of APP infection (27-31dpi). Nasal, tonsillar and blood samples were collected weekly. Salivary glands, tonsils, BALF, lung tissues and tracheobronchial LNN were harvested at necropsy. Peripheral blood mononuclear cells (PBMC) and lymphocytes isolated from tonsils, lung samples and tracheobronchial LNN were phenotyped by determining the expression of CD4, CD8 $\alpha$  and TCR- $\gamma$   $\delta$ . Furthermore, their ability to produce IL-17A, IL-10 and TNF- $\alpha$  was analysed. For this purpose, cells were stimulated overnight with a crude capsular extract of APP serotype 2.

**Results:** Clinical records, microbiological investigations and pathological findings confirmed the induction of a chronic APP infection. First results point to the induction of APP-specific IL-17A producing T cells both in acute and persistent infection as well as IL-10 producing T cells in persistent infection. This may indicate that IL-10 production plays a role in the persistence of APP, but further investigations are needed to confirm this hypothesis.

**Conclusion:** In conclusion, this study provides first hints that T cells are involved in the immune-pathogenesis of porcine contagious pleuropneumonia.

**Disclosure of Interest:** None Declared

**Keywords:** APP, persistence, T cells

