Secret of the Pig's Immune System Revealed by Spanish Study

11 June 2014

SPAIN - Working with researchers in Italy, a group of Spanish scientists has revealed a protein that could be a new marker for acute inflammatory and infectious pathology in pigs.

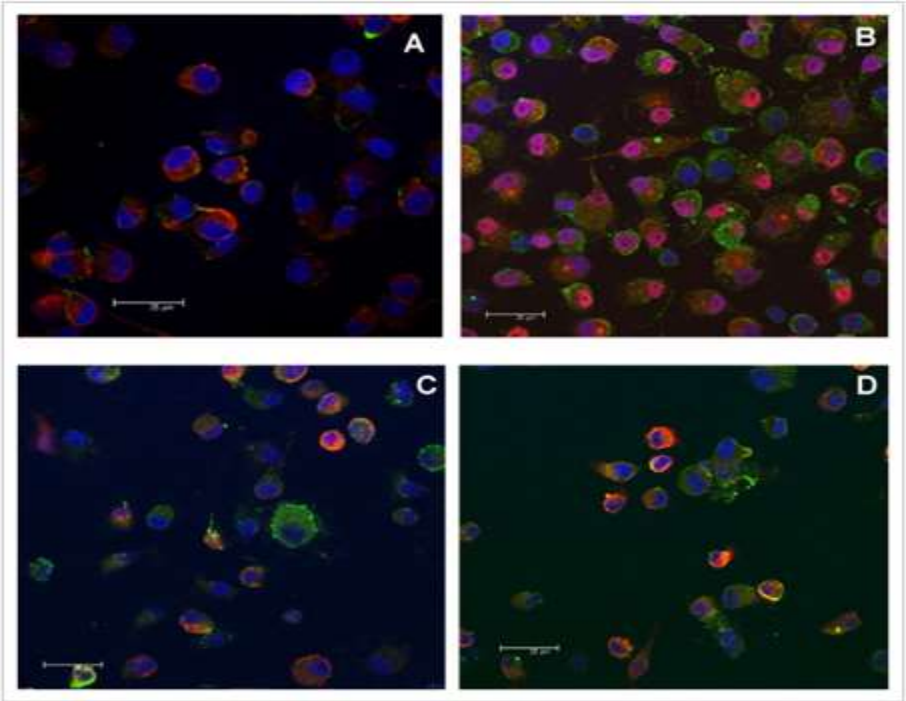
Researchers from Spain's centre for animal health research (CReSA), the University of Lleida, Humanitas Clinical and Research Center and Department of Translational Medicine (University of Milan) have characterised, for the first time, swine PTX3 (SwPTX3) in the porcine innate immune system. This protein is a candidate novel marker for acute inflammatory and infectious pathology in pigs.

Long pentraxin 3 (PTX3) is a conserved pattern-recognition secreted protein and a host defence-related component of the humoral innate immune system. The data indicate that PTX3 is involved in a variety of defence mechanisms, including resistance against some viral infections.

A recent study has shown that both seasonal H1N1 and pandemic H1N1 influenza viruses were resistant to PTX3.

The aim of the present study was to characterise SwPTX3 protein expression in influenza virus-infected pigs. First, the researchers performed in silico studies to evaluate the cross-reactivity of PTX3 human antibodies against SwPTX3. Secondly, they used *in vitro* analysis to detect SwPTX3 presence in swine bone marrow dendritic cells (SwBMDC) upon stimulation with different agents by Western blot and immunofluorescence. Finally, the levels of SwPTX3 were assessed in experimental infection of pigs with different strains of influenza virus.

This is a novel study where the expression of SwPTX3 was evaluated in the context of a pathogen infection. The initial characterization of SwPTX3 in influenza virus infected pigs contributes to understand the role of PTX proteins in the immune response. Moreover, these results will encourage ongoing research efforts as candidate novel marker for acute inflammatory and infectious pathology in pigs.



This work has been recently published in: Crisci E., Fraile L., Valentino S., Martínez-Guinó L., Bottazzi B., Mantovani A. and Montoya M. 2014. Immune characterization of long pentraxin 3 in pigs infected with influenza virus. Vet Microbiol. Jan 10;168(1):185-92.

ThePigSite News Desk