# IDENTIFICATION OF NEW IMMUNOPROTECTIVE SURFACE PROTEIN VACCINE CANDIDATES AGAINST STREPTOCOCCUS SUIS INFECTION BY PROTEOMICS

***L. Gómez-Gascón [(1)], A. Olaya-Abril [(1)], I. Jiménez-Munguía [(1)], I. Luque [(1)], C. Tarradas [(1)], J.A. Bárcena [(1)], M.J. Rodríguez-Ortega [(1)].***

[(1)] Universidad de Córdoba.

*Streptococcus suis* is a major Gram-positive swine pathogen, which has raised in the last years a great public concern, as it is also a zoonotic agent. In Gram-positive bacteria, the surface antigens with highest vaccine potential are cell wall-anchored proteins, due to their high expression and accessibility to antibodies. In the present study, we selected a set of *S. suis* strains isolated from ill pigs, belonging to the most prevalent serotypes in Europe. These strains were analysed by a previously validated proteomics approach consisting of the protease digestion of live bacteria and the selective recovery of exposed domains followed by LC/MS/MS analysis. Such a strategy has been demonstrated to be very effective for the fast and reliable identification of surface-exposed, abundant proteins, which are in principle those with the highest chances to become effective components of vaccine formulations. Three proteins were found in the majority or totality of serotypes analysed. They were then selected for testing their protection capacity in animals. One of these proteins, designated Sat, was assayed in an *in vivo* murine model, and conferred protection in terms of survival rate (80%) and decreasing the bacterial burden in kidney. These data suggest that Sat is a potential vaccine candidate against serotype-2 infection, which is the most prevalent and virulent worldwide. The immunoprotective capacities of the other two proteins are being tested, both in a murine and a swine model of infection.