

A photograph of several petri dishes containing bacterial cultures. One dish in the foreground shows a dense, yellowish, textured growth. Another dish behind it shows a smoother, reddish-brown surface. The dishes are stacked and slightly out of focus in the background.

Microbiota against Streptococcus suis in pigs

From 2018-2022 | Total budget € 80,000

New antimicrobials and colonization resistance against *S. suis* infections

Currently, one global concern is the upsurge of disease-causing bacteria that are resistant to antibiotics. European efforts have been initiated to reduce preventative use of antibiotics in livestock farming, notably in pigs. The upper respiratory tract microbiota of pigs are of particular interest because of their association with common swine infectious diseases. *Streptococcus suis* are Gram-positive pathobionts which are naturally present in the upper respiratory tract of pigs. In early life, *S. suis* can cause highly invasive infections leading to meningitis, sepsis and endocarditis. Unfortunately, no effective vaccines that protect piglets against *S. suis* infections exist. Colonisation of the piglet palatine tonsils by common bacteria may lower the establishment of *S. suis* and risk of invasive disease. To identify bacterial taxa correlated with *S. suis* abundance, we are collecting microbiological samples from the tonsils of piglets around weaning and have identified bacterial taxa with strong co- and anti-occurrences with *S. suis*. A culturomics approach in combination with whole genome sequencing is being used to identify commensals that produce antimicrobial molecules inhibiting growth of *S. suis*. Key abundant bacterial species present in the oropharyngeal biofilms of healthy animals on farms without a recent history of problems with *S. suis* will be tested for their contribution to colonisation resistance against *S. suis* around weaning.

More information:

www.wur.eu/microbiota

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