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PIG-PARADIGM

An international, cross-functional and interdisciplinary AMR project

CONTACT US

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Preventing **I**nfection in the **G**ut of developing **P**iglets – and thus **A**ntimicrobial **R**esistance – by disent**A**ngling the interface of **DI**et, the host and the **G**astrointestinal **M**icrobiome

ABOUT PIG-PARADIGM

Antimicrobial resistance (AMR) is becoming one of the greatest global health threats, and the overuse and misuse of antimicrobials are accelerating the spread of AMR.

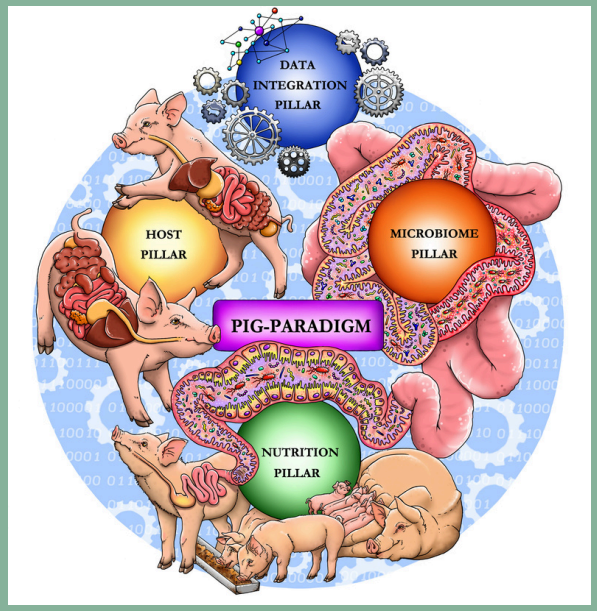
In the pig production industry, a major part of antibiotic usage is related to treatment of enteric infections. Now with DKK 150 million (€20.1 million) of funding from the Novo Nordisk Foundation, PIG-PARADIGM has brought together scientists from Denmark, the Netherlands, and the United States, aiming to improve intestinal robustness and resilience in developing piglets by advancing fundamental knowledge of the pig gut microbiome and its interaction with nutrition and the host.

New knowledge on how to strengthen piglets' natural defense will form the basis for the development of industrial solutions in commercial pig production. These strategies will curtail the dependence on antibiotics, thereby contributing to the global effort to mitigate antimicrobial resistance. The reduction in antibiotic usage not only aligns with responsible farming practices but also enhances the image of animal agriculture.

PIG PARADIGM

RESEARCH

PIG-PARADIGM is organized into four research pillars, each of these pillars is led by dedicated scientists from esteemed institutions including Aarhus University, University of Copenhagen, Aalborg University, Wageningen University & Research, and University of California, Davis. Through close collaboration and synergistic efforts, these experts ensure optimal teamwork.



Within the Host and Microbiome Pillars, a large cohort study with pigs in a commercial production system is a focus in order to identify key attributes of robust pig gut health. The Nutrition Pillar emphasizes fundamental and practical knowledge of the pig diet and nutritional interventions to reduce the need for antibiotic use. The Data Integration pillar amalgamates all generated data from the other three pillars to study the intestinal pig microbiome in depth.

OUR VISION

The vision of PIG-PARADIGM is to reduce the overall need for antimicrobial treatments and mitigate the spread of AMR by delivering fundamental knowledge on:

- What defines healthy and robust intestinal function in pigs
- What determines the host and microbial mechanisms leading to post weaning diarrhea (PWD) and subsequent antibiotic use
- How the intestinal microbiome and nutrition can be modulated to prevent the need for antibiotic use by promoting resilience to early life stress and intestinal infections
- How AMR can be minimized through increased intestinal resilience

THE IMPACTS

PIG-PARADIGM works towards bringing long-lasting impact across multiple dimensions:

- Reducing the antibiotic use in livestock production, with a specific focus on pigs
- Mitigating the spread of antimicrobial resistance within livestock production
- Promoting One Health in animal science and veterinary education
- Elevating awareness regarding the challenge of antimicrobial resistance
- Advocating and promoting international cooperation to curtail antibiotic usage in livestock production