A detailed investigation of the porcine skin and nose microbiome using universal and Staphylococcus specific primers - DTU Orbit (27/10/2019)

A detailed investigation of the porcine skin and nose microbiome using universal and Staphylococcus specific primers

MRSA is an increasing problem in humans as well as livestock. The bacterial co-colonization of the skin in MRSA carriers has been poorly investigated and moreover, there have been no methods for high resolution investigations of the Staphylococcus genus apart from tediously culturing or doing multiple PCRs. On 120 samples from pig ear, skin and nose, we generated amplicons from the V1-V2 region of the 16S rRNA gene to gather an overview of the genus-level microbiome, along with using MRSA specific plates to count MRSA. In parallel with this, amplicons of the tuf gene were generated, targeting only a region of the tuf gene found only in the Staphylococcus genus. Using these methods, we determined a core microbiota across the healthy pig and determined the Staphylococcus genus to be dominated by S. equorum. Moreover, we found Streptococcus to be inversely associated with Staphylococcus and MRSA, suggesting a role for this genus in combating MRSA. In this work, we have thoroughly investigated the skin and nose microbiome of the pig and developed a high throughput method for profiling the Staphylococcus genus which we believe will be useful for further investigations.

General information
Publication status: Published
Organisations: Department of Biotechnology and Biomedicine, National Veterinary Institute, Section for Microbial and Chemical Ecology, Bacterial Ecophysiology and Biotechnology, Antimicrobial Agents and microbial ecology, Bacteriology & Parasitology, National Food Institute, Research group for Genomic Epidemiology
Corresponding author: Pedersen, K.
Contributors: Strube, M. L., Hansen, J. E., Rasmussen, S., Pedersen, K.
Number of pages: 9
Publication date: 2018
Peer-reviewed: Yes

Publication information
Journal: Scientific Reports
Volume: 8
Article number: 12751
ISSN (Print): 2045-2322
Ratings:
BFI (2018): BFI-level 1
Scopus rating (2018): CiteScore 4.29 SJR 1.414 SNIP 1.24
Web of Science (2018): Indexed yes
Original language: English
Electronic versions:
Strube_et_al_2018_Scientific_Reports.pdf
DOIs:
10.1038/s41598-018-30689-y

Bibliographical note
Open Access This article is licensed under a Creative Commons Attribution 4.0 International License
Source: PublicationPreSubmission
Source ID: 152359517
Research output: Contribution to journal › Journal article – Annual report year: 2018 › Research › peer-review