Prevotella copri increases fat accumulation in pigs fed formula diets

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Video Byte

Keywords: Microbiome, fat accumulation, lipid metabolism, digestion, metabolism, pigs, duroc pigs, gut microbiome, inflammation, metabolites, prevotella copri, bacterial community, formula diets, meat, pork, pigs, porcine, muscle growth, lipid transport, lipolysis, lipogenesis, mTOR signaling pathway, inflammatory response

Posted Date: October 13th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-967260/v1>

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Abstract

Excessive fat accumulation in pigs reduces economic returns in the pig industry. In humans and mice, the gut microbiome plays a role in host metabolism and fat accumulation, but the effects of a modern high-energy, high-protein diet on the gut microbiome and fat accumulation in pigs is not yet known. A recent study investigated the correlation between gut microbiome changes and fat accumulation in duroc pigs. They found that *Prevotella copri* abundance in the gut was positively associated with fat accumulation as well as increased obesity-related serum metabolite, increased host intestinal barrier permeability, and chronic inflammation. To examine causality, researchers isolated *P. copri* from pigs and administered it to germ-free mice. Treated mice showed similar phenotypes to pigs with high levels of *P. copri*, which included increased fat accumulation and altered serum metabolites. Their gene expression suggested increased chronic inflammatory response, lipid synthesis, and fat accumulation, but decreased lipid breakdown, lipid transport, and muscle growth. These results suggest that *P. copri* activates the host chronic inflammatory response and fat accumulation as well as highlight a potential target to reduce fat accumulation in pigs.