THE CHEESE MATRIX MODULATES THE IMMUNOMODULATORY PROPERTIES OF PROPIONIBACTERIUM FREUDENREICHI/I IN PIGLETS

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CONTEXT

The cheese matrix impacts:
- Production of immunomodulatory metabolites
- Protection of Slps against digestive proteolysis
- Tolerance to digestive stresses

STRATEGY

A 2-in-1 Bacterium

Cheese matrix

PF-cheese

PF-culture

Both PF-culture and PF-cheese delivered the same amount of metabolically active PF in piglets’ colon

PF ingestion decreased TNFα and IL-10 secretion only in PBMC, whatever the delivery vehicle of PF

PF-cheese enhanced Treg and Th2 populations and PF-culture decreased Th17 population, compared to the control group

Ex vivo response of MLNC to LPS stimulation was different according to the delivery vehicle of PF

Is P. freudenreichii (PF) immunomodulatory effect impacted by the cheese matrix?

Both PF-culture and PF-cheese delivered the same amount of metabolically active PF in piglets’ colon compared to a bacterial culture. However, the functional cheese’s immunomodulated differently intestinal and systemic immunity compared to PF-culture. We hypothesized this could be due to a difference in surface compounds, such as the immunomodulatory surface layer proteins Slps.

The cheese matrix did not enhance the amount of metabolically active PF in piglets’ colon compared to a bacterial culture. However, the functional cheese’s immunomodulated differently intestinal and systemic immunity compared to PF-culture. We hypothesized this could be due to a difference in surface compounds, such as the immunomodulatory surface layer proteins Slps.

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