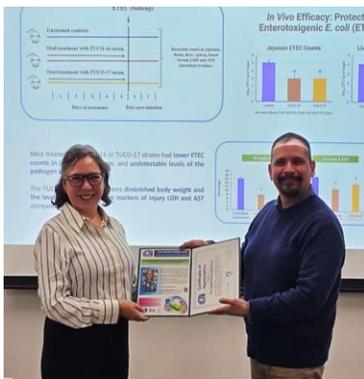


Exploring Maternal Milk as a Source of Beneficial Bacteria for Pet Gut Health and Immunity

On February 27, 2026, CAFI hosted Dr. **Sandra Quilodrán Vega** from the Laboratory of Food Microbiology, Faculty of Veterinary Sciences, University of Concepción (Concepción, Chile), who delivered a seminar entitled “**Exploring Maternal Milk as a Source of Beneficial Bacteria for Pet Gut Health and Immunity**”.

During her presentation, Dr. Quilodrán Vega highlighted the biological significance of maternal milk as a reservoir of host-adapted lactic acid bacteria with potential probiotic properties for companion animals. Her research focuses on the isolation and functional characterization of bacterial strains derived from canine colostrum and milk, evaluating their resistance to gastrointestinal conditions, antimicrobial activity against enteropathogens, and capacity to adhere to intestinal epithelial cells. Particular emphasis was placed on the strains *Lactiplantibacillus plantarum* TUCO-16 and *Lactiacaseibacillus rhamnosus* TUCO-17, which demonstrated remarkable resilience under simulated digestive conditions and strong inhibitory effects against pathogenic *Escherichia coli*, *Salmonella*, and *Clostridium perfringens*.

The seminar also addressed the immunomodulatory properties of these milk-derived strains. *In vitro* studies using canine macrophages revealed modulation of cytokine expression and innate immune receptors, while *in vivo* experiments demonstrated enhanced resistance to intestinal infections and reduced systemic dissemination of pathogens. Furthermore, recent advances in microencapsulation and freeze-drying technologies were presented, showing how optimized probiotic formulations can maintain bacterial viability and functional activity, offering a safe alternative to antibiotics in the management of acute canine diarrhea. The session concluded with an active discussion on the relevance of host-specific probiotics in veterinary medicine and their potential translational implications.



Importantly, the research presented reflects a strong framework of international collaboration, integrating expertise from Chile, Argentina, and Japan. These joint efforts strengthen scientific exchange between the University of Concepción and CAFI-Tohoku University, fostering interdisciplinary research in immunobiotics, food microbiology, and animal health at a global level.