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IMMOONITY Project Delivers Promising Advances in Sustainable Bovine Immunotherapy to Combat Antimicrobial Resistance

FarmPharma AB, the lead partner of the IMMOONITY consortium, a collaboration of four international partners — FarmPharma, Karolinska Institutet (KI), Cebiphar, and JAFRAL — is pleased to announce the successful completion of the IMMOONITY project.

A key aim of the IMMOONITY project was to develop a sustainable, universal veterinary anti-infective immunotherapy for the treatment and prevention of bacterial and viral infections in cattle, with the ultimate goal of combating antimicrobial resistance (AMR). By stimulating the animal's own immune system, InterferOx, the product developed during the IMMOONITY project, enhances the resistance of infected organisms to pathogens and represents a promising approach to reducing reliance on conventional antibiotics, thereby contributing significantly to the fight against AMR. This project has made significant strides toward enhancing animal health and welfare in the face of growing global health challenges.

The project successfully identified and characterized promising components for a novel immunotherapeutic. KI purified a range of bovine interferons, which FarmPharma then rigorously tested for their antiviral and anti-mycoplasma activities. These findings were crucial in allowing FarmPharma to determine the optimal composition and dosage for InterferOx, the project's lead immunotherapy candidate.

A key achievement of the IMMOONITY project was the establishment of a robust *in vivo* experimental model for mycoplasma-induced pneumonia in calves by CRO Cebiphar. This model successfully demonstrated clear differences between infected and uninfected groups, providing a reliable platform for future efficacy studies and enabling the determination of appropriate sample sizes for proof-of-concept (PoC) studies.

In the crucial step of scaling up production for InterferOx, JAFRAL - a CDMO company - specializing in the production of recombinant proteins and other advanced biologics - successfully transitioned from small-scale batches to larger production. Through collaborative efforts with KI and coordinated manufacturing by FarmPharma, JAFRAL successfully optimized conditions. These optimized conditions, evaluated in smaller-scale production runs, demonstrated improved endotoxin removal and enhanced process yield. The resulting purified material is now undergoing final activity testing at FarmPharma.

FarmPharma's IMMOONITY platform is of considerable importance for changing the paradigm in animal husbandry, with the aim of completely moving away from antibiotics toward environmentally friendly animal husbandry. The economic impact of such a shift, promoting healthier animals and sustainable practices, is substantial. FarmPharma is committed to further developing InterferOx and exploring its broad applications in veterinary medicine, ultimately contributing to more sustainable and healthier livestock populations worldwide. This innovative approach is highly scalable and holds significant potential beyond cattle; FarmPharma plans to test its application in other animals, including pigs, horses, and various pet animals. Furthermore, FarmPharma is actively investigating the possibility of applying this approach even to farmed fish, broadening its impact across diverse animal agriculture sectors.

"The IMMOONITY project has laid a strong foundation for a new generation of bovine anti-infective immunotherapies, crucially contributing to the global effort against antimicrobial resistance," says Irina Zaitseva, CEO of FarmPharma AB. "By developing sustainable solutions like InterferOx that enhance an animal's natural defences, we are taking a significant step towards reducing the need for traditional antibiotics in livestock, ultimately benefiting both animal and human health. Our collaborative approach across all partners has been instrumental in achieving these significant advancements."

FarmPharma is actively investigating the most optimal ways for commercializing the results received and for further product development, ensuring that this groundbreaking technology can reach the animals and industries that need it most.

More about IMMOONITY project: <https://www.farmpharma.se/farmpharmas-eureka-project-has-started-in-accordance-with-the-plan/>

About FarmPharma AB: FarmPharma operates in the development and distribution of veterinary products, and their first product is for prevention and treatment of bacterial and viral infections in cattle without the use of antibiotics.

About Karolinska Institutet (KI): Karolinska Institutet is a medical university in Stockholm, Sweden and the partners at Department of Medicine Solna have contributed with both protein chemistry and immunology expertise.

About Cebiphar: CRO founded in 1979, CEBIPHAR is the long-standing partner of many companies in the pharmaceutical industry (human and veterinary) and medical devices. CEBIPHAR offers a wide range of services in terms of analytics, microbiology and veterinary studies as well as technical and regulatory support.

About JAFRAL: JAFRAL is a leading Contract Development and Manufacturing Organization (CDMO) specializing in the production of non-GMP and GMP advanced biologics. With over a decade of experience, JAFRAL offers end-to-end manufacturing services for a broad range of biologics - including pDNA, mRNA, recombinant proteins OMVs, LBPs and bacteriophages for various therapeutic areas.

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