Título del Proyecto	**"Development of Nanobodies against Pseudomona aeruginosa and Staphylococcus aureus and evaluation as immunotherapeutics" CF.Nbs.PA-SA**
Nº de expediente asignado	101154094
Abstract	"Cystic fibrosis (CF) is a genetic disorder, impacting various organs due to CFTR gene mutations. Lungs are severely affected by secretions, harboring bacteria, causing recurrent, chronic, and often fatal infections in 90% of CF patients. Globally, around 105,000 people across 94 countries suffer from CF, with an improved median survival age of 30 to 40 years, yet poor quality of life persists due to daily treatment needs. Staphylococcus aureus (SA) and Pseudomonas aeruginosa (PA) are the primary pathogens isolated from CF patients' respiratory tracts, leading to most CF-related deaths. Their factors of virulence contribute to extensive damage, and despite intensive treatments, infections persist, fostering antimicrobial resistance. Antibiotic resistance claims over 35,000 lives yearly in the EU alone, underscoring the urgent need for novel therapeutics to combat SA and PA infections. Nanobodies (Nbs) offer revolutionary immunotherapy potential due to their unique attributes. They are ten times smaller than conventional antibodies, maintaining strong recognition capability at nanomolar levels. Nbs exhibit low immunogenicity, rapid tissue penetration, and can target previously inaccessible antigen sites. Their small size provides enhanced stability, thermal resistance, reversibility of unfolding, proteolytic resistance, and high solubility. Given the prevalence and severe consequences of SA and PA infections, the central aim of the project is to develop therapeutic Nbs to mitigate the impact of these infections and improve the quality of life for CF patients."
Entidad Financiadora	Unión Europea
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Importe de la ayuda	181.152,96 €

Fechas de ejecución del proyecto	Starting date: 01/09/2024; End date: 31/08/2026
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