



Finanziato
dall'Unione europea
NextGenerationEU



Ministero
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Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

HEAL ITALIA

SPOKE N.5

“Next-Gen Therapeutics”

PROJECT TITLE: Development of an ORGANOid-Based Platform for CAR-T Validation Using Nanoparticles Mediated mRNA Delivery ORGANO-CAR

LEADING PROPONENT: CAREBIOS

PARTNER: University of Catanzaro “Magna Graecia”; University of Brescia (UNIBS); IRCCS CROB Centro di Riferimento Oncologico della Basilicata

“Campus Regi Biologia”-CaReBios

CA. RE. BIOS
s.u.r.l.

CaReBios is a medium enterprise, founded in 2008 by a group of young researchers.

It has the purposes of:

1. screening life-saving therapies to fight tumors. It is based on an uniquely positioned paradigm: the use of a variety of experimental models capable of accurately predicting the clinical efficacy of new experimental drugs (pharmaceutical origins).
2. developing avant-garde models for the screening of innovative drugs to significantly improve cancer treatment.
3. drug Screening by adapting models to their mechanism of action.
4. evaluating the antitumor activity of selected agents/rational combinations, in human solid tumor models characterized in terms of expression of relevant targets.

The real essence of the company resides in being able to perfectly combine the ability to research to the marketing of the results.



Objectives and Expected Results

The ORGANO-CAR project aims to redefine immunotherapy for solid tumors, in which the complex interaction between the immune system and the tumor microenvironment poses challenges for chimeric antigen receptor T-cell (CAR-T) based therapy. The main objective of the project is to develop and validate an innovative and integrated platform, named “ORGANO-CAR”, which takes advantage of tumoral organoids and advanced nanotechnology strategies for the development of CAR-T therapy. In that context, tumor organoids, tridimensional in vitro cultures which replicate native tumor environments, can represent an innovative instrument for CAR-T validation. The project aims to overcome the existing limits connected to the application of the CAR-T therapy on solid tumors, concentrating on safety, efficacy and translational potential. In conclusion, ORGANO-CAR represents a pioneer initiative in the intersection between nanotechnology, organoids and CAR-T therapy, with the potential of remodeling the landscape of immunotherapies against solid tumors.