

# EPICART – DNA methylation signature for CAR T cell therapy

## MISSION

To predict the response to a CART therapy before the infusion of the cells, preventing unwanted adverse reactions.

## SECTOR

Diagnostics/Therapeutics

## STAGE

Signature validation in clinical assay

## POTENTIAL INDICATIONS

Patients with B-cell malignancies before the treatment with CART19 cells.

## TEAM



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## THE PROBLEM

- Chemotherapy is the first line of therapy B-cell malignancies, being highly unspecific and with high relapsed-redractory (r/r) rates
- Novel therapeutic alternatives have emerged, such as CAR T-cells
- Despite the favourable expectations, CARTs are associated with different toxicities
- The treatment and the post-treatment care are very costly

## COMPETITIVE ADVANTAGE

- EPICART is the first diagnostic tool predicting the outcome of a CART treatment before its commencement
- Cost-effective and with a minimal invasion of the patient
- Early prognosis
- Reduced risk
- Reduced costs

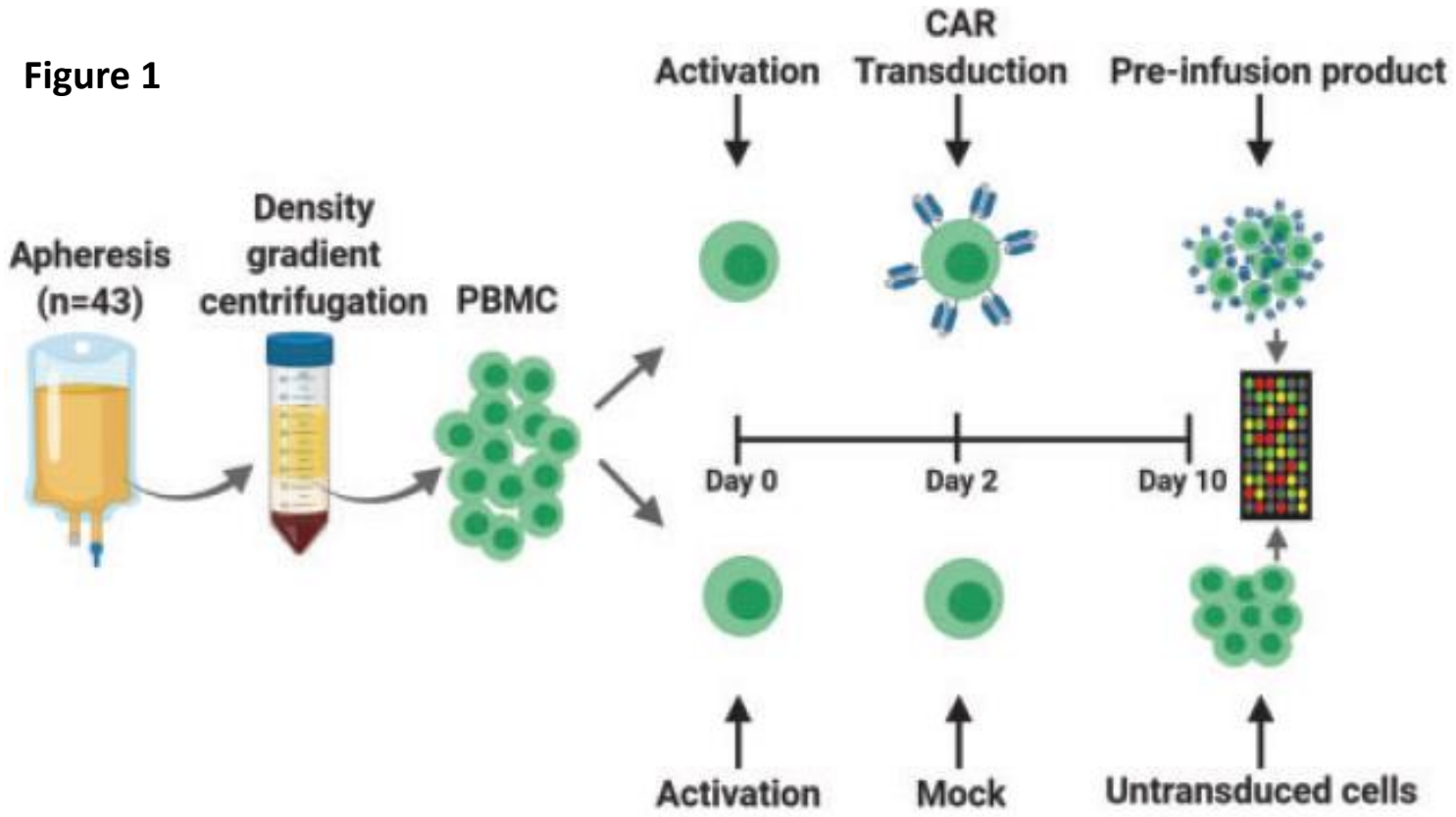
## THE SOLUTION

- EPICART is an identified epigenetic signature from pre-infused CAR T-cells capable of predicting the outcome of the patients (OS- and EFS-probabilities)
- The signature can predict the probability of a patient to develop side effects or a non-responsive outcome
- EPICART will prevent high-risk CART interventions enabling clinicians and healthcare systems to improve their clinical decisions

## ADDITIONAL INFO

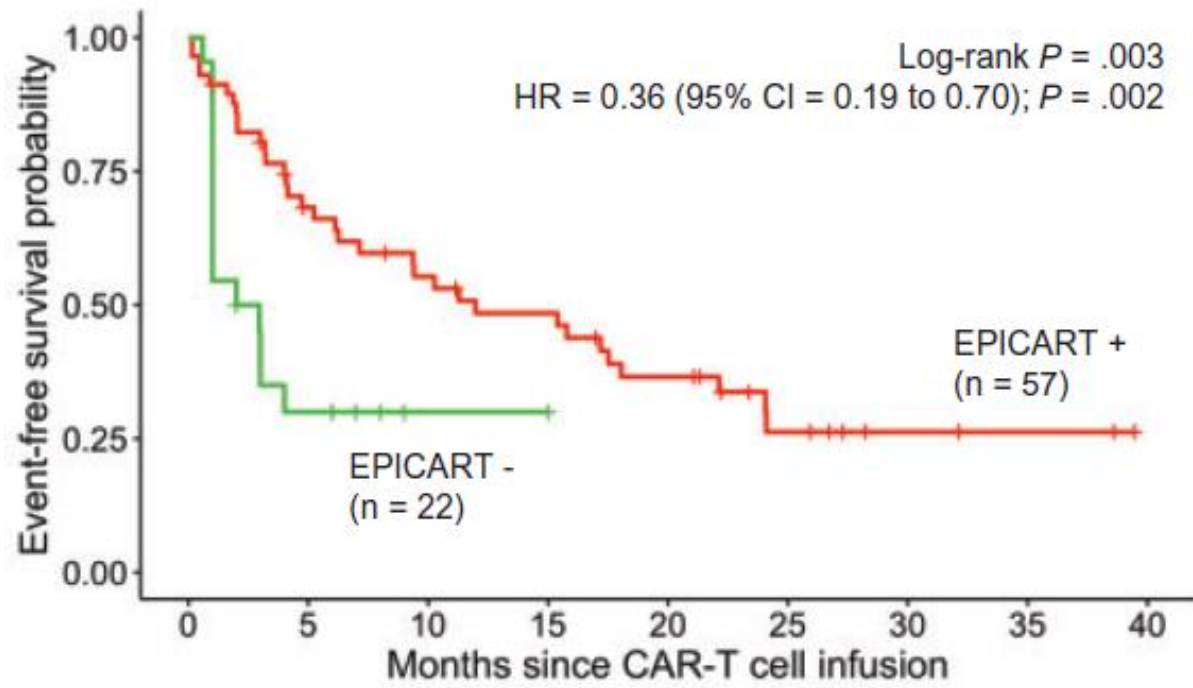
- PCT patent filed (PCT/EP2022/054803)
- Prestigious grants: AGAUR Producte 2021; Prueba de Concepto 2022
- Institut de Recerca contra la Leucèmia Josep Carreras
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- Related publications: see page 2

**Figure 1**



**Figure 1.** Experimental design developed to detect DNA methylation changes in patient T cells upon CAR transduction (1).

**Figure 2**



**Figure 2.** Kaplan-Meier analysis of EFS (left) and OS (right) in the same patients with a B-cell malignancy according to the presence of an EPICART signature in the preinfused CART19 cells, defined by their methylation status (1).

