3 de julio de 2025

# OC-1; Autologous CAR T CD1a Immunotherapy for coT-ALL

OneChain IMMUNOTHERAPEUTICS

***Wilmar Castillo***
*Clinical Operations Director*

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# Beyond the current standard of care

OneChain was created in 2020 to develop better therapies for cancer patients in need


Spin-off from the **Josep Carreras Leukaemia Research Institute** (ICREA Professor Pablo Menéndez).

A **clinical stage** biotech company.

We develop **CAR-T therapies** for **leukaemia** and **solid tumours.**

**Autologous** and **Allogeneic.**

Located in the **Parc Científic de Barcelona.**

Raised **over €15M** so far, from **VC investors & non-dilutive funding.**

Our mission is to offer immunotherapies beyond the standard of care, based on CAR-Ts.

# OneChain Pipeline 2025

## Autologous and allogeneic therapies; haematological and solid cancer

| Product | Target | Disease | Development | Preclinical | Clinical |
|---|---|---|---|---|---|
| OC-1 | **CD1a** | T-cell Leukaemia | | | **ODD FDA & EMA** |
| OC-1d | **CD1a/CCR9** | T-cell Leukaemia | | | |
| OC-2 | **CD22** | B-cell Leukaemia | | | |
| OC-3 | **Multiple** | Any Allogeneic | | | |
| OC-4 | **IL13Rα2/OC-4.2** | Glioblastoma | | | |

# Partners and Stakeholders

We are proud to work with cutting-edge organizations from the private and public sector


## Investors

Fundación JOSEP CARRERAS contra la leucemia

invivoventures

clave
INVERSIÓN E INMERSIÓN EN PROYECTOS DE VALOR

MINISTERIO DE CIENCIA E INNOVACIÓN
CDTI
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NA RA.
HEALTH CAPITAL

Josep Carreras LEUKAEMIA Research Institute

MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES

Financiado por la Unión Europea NextGenerationEU

Plan de Recuperación, Transformación y Resiliencia

AGENCIA ESTATAL DE INVESTIGACIÓN

asociación española contra el cáncer

CDTI neotec

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ICEX

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, COMERCIO Y TURISMO

enisa

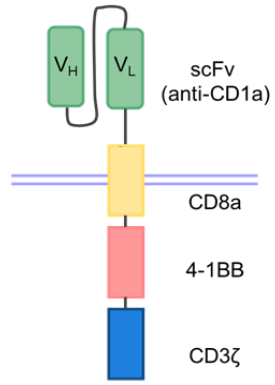
DOCTORATS INDUSTRIALS
10 anys de recerca col·laborativa a Catalunya

# OC-1 Project Overview

## Autologous CAR T CD1a Immunotherapy for the treatment of R/R coT-ALL

- **Value proposition:**

First-in-class CD1a-targeted CAR T therapy offering a potentially curative, highly selective treatment for patients with relapsed/refractory cortical T-ALL, with reduced off-tumor toxicity.




- **Unmet Medical Need**

T-ALL accounts for ~15% of pediatric and ~25% of adult ALL cases; CoT-ALL represents ~30% of T-ALL.

R/R disease occurs in ~20% of children and up to 50% of adults, with poor outcomes.

There are no approved targeted therapies, highlighting a critical unmet medical need.

- **Mechanism of Action:**

CD1a CAR T cells recognize and bind to CD1a-expressing cells, triggering T cell activation and leading to cytokine release, proliferation, and direct cytotoxic killing of the CD1a-expressing target cells.

# OC-1 T-cell Leukaemia

CAR-T therapies have revolutionised B-cell lymphoma. But r/r T-cell Leukaemia remains a very high unmet medical need.

- T-ALL represents **15% to 25%** of all acute leukemias diagnosed **in children and adults**, respectively.
- Improved survival rates thanks to intensive chemotherapy, but **OS is still <70%. Relapsed patients** have a particularly **poor prognosis**.
- No curative options beyond 2L, except HSCT. There is a **need for novel targeted therapies**.
- **CD1a** is specific and safe target for T-cell tumors, with no significant expected off-tumor toxicities, **circumventing current limitations** (e.g. leukopenia, fratricide).

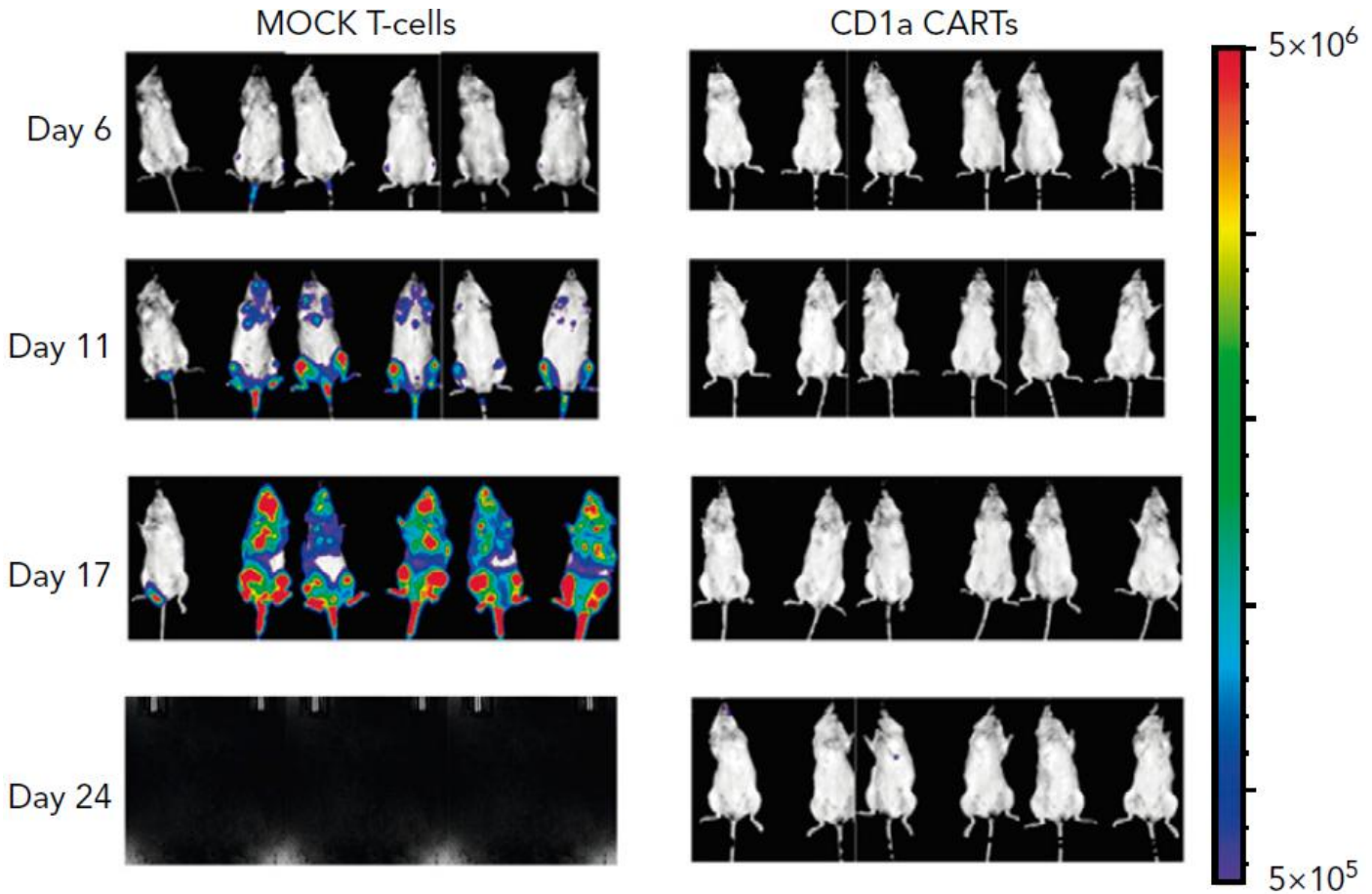
# OC-1 Project Overview

## Current Status of Development

- Completed **non-clinical package** demonstrating potent anti-tumor activity and selective targeting of CD1a-positive T-ALL cells.
- Validated **GMP-manufacturing process**.
- **First-in-Human (FIH) Clinical trial** to assess safety and preliminary efficacy in R/R cortical T-ALL patients: ongoing (Dose level 2 currently recruiting).
- **Long-term Follow up (LTFU) study** to monitor the long-term safety and persistence of the therapy: ongoing.
- **Retrospective study** to describe the progression of R/R coT-ALL patients completed (Eur J Hematology, under review).
- **Orphan Drug Designation (ODD)** granted by both EMA and FDA.
- **Intellectual Property (IP) strategy** in place.

# OC-1 Non-clinical package

## First in vivo POC

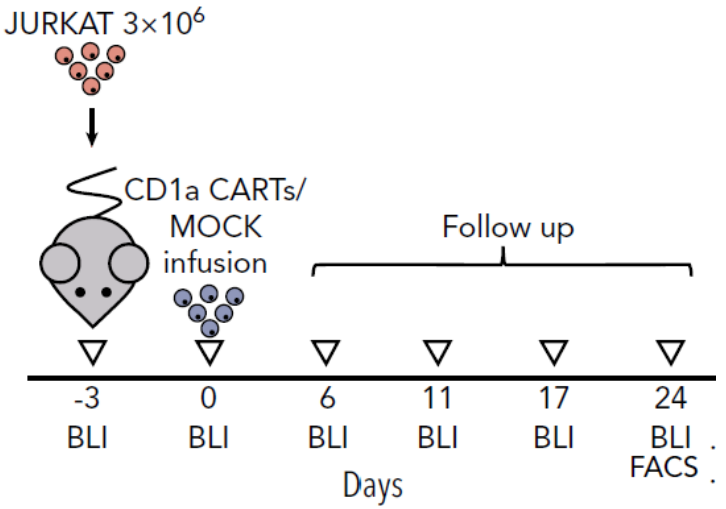



blood
Regular Article

IMMUNOBIOLOGY AND IMMUNOTHERAPY

**Fratricide-resistant CD1a-specific CAR T cells for the treatment of cortical T-cell acute lymphoblastic leukemia**

Diego Sánchez-Martínez,[1] Matteo L. Baroni,[1] Francisco Gutierrez-Agüera,[1] Heleia Roca-Ho,[1] Oscar Blanch-Lombarte,[2] Sara González-García,[3] Montserrat Torrebadell,[4,5] Jordi Junca,[6] Manuel Ramírez-Orellana,[7] Talía Velasco-Hernández,[1] Clara Bueno,[1] José Luís Fuster,[8,9] Julia G. Prado,[2] Julien Calvo,[10] Benjamin Uzan,[10] Jan Cools,[11] Mireia Camos,[4,5] Françoise Pflumio,[10] María Luisa Toribio,[3] and Pablo Menéndez[1,12,13]




- CD1a CAR-T has demonstrated efficacy in an in-vivo T-cell leukaemia model.
- Robust expansion of activated CAR-T cells reveals **no signs of fratricide.**

# OC-1 Non-clinical package

## Efficacy and persistence in a PDX rechallenge mouse model

blood
Regular Article

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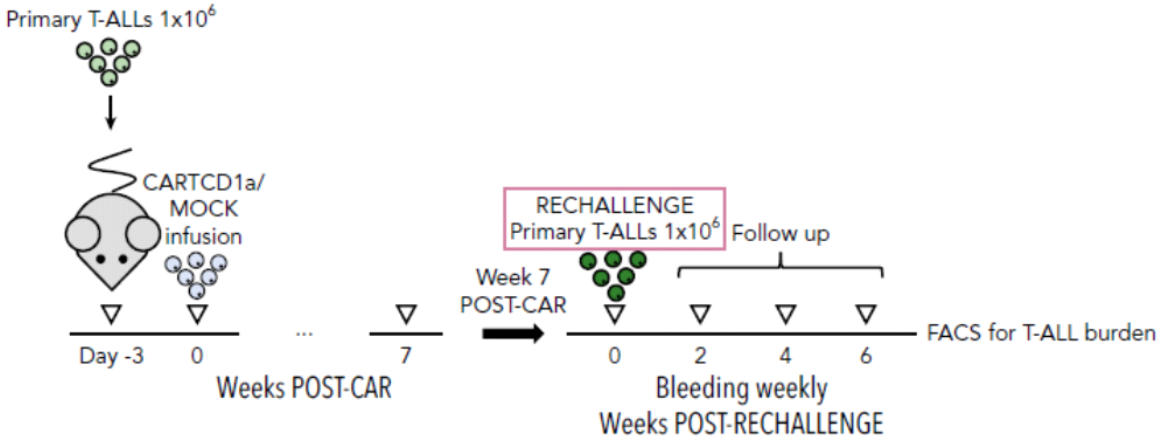
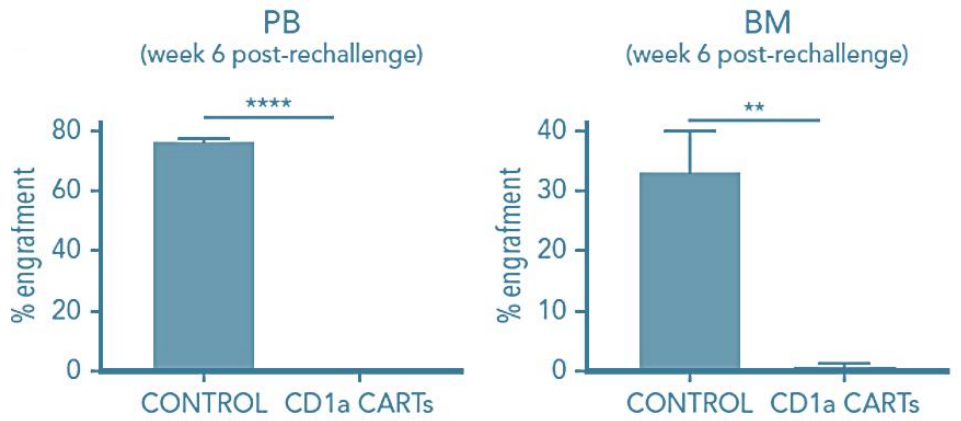


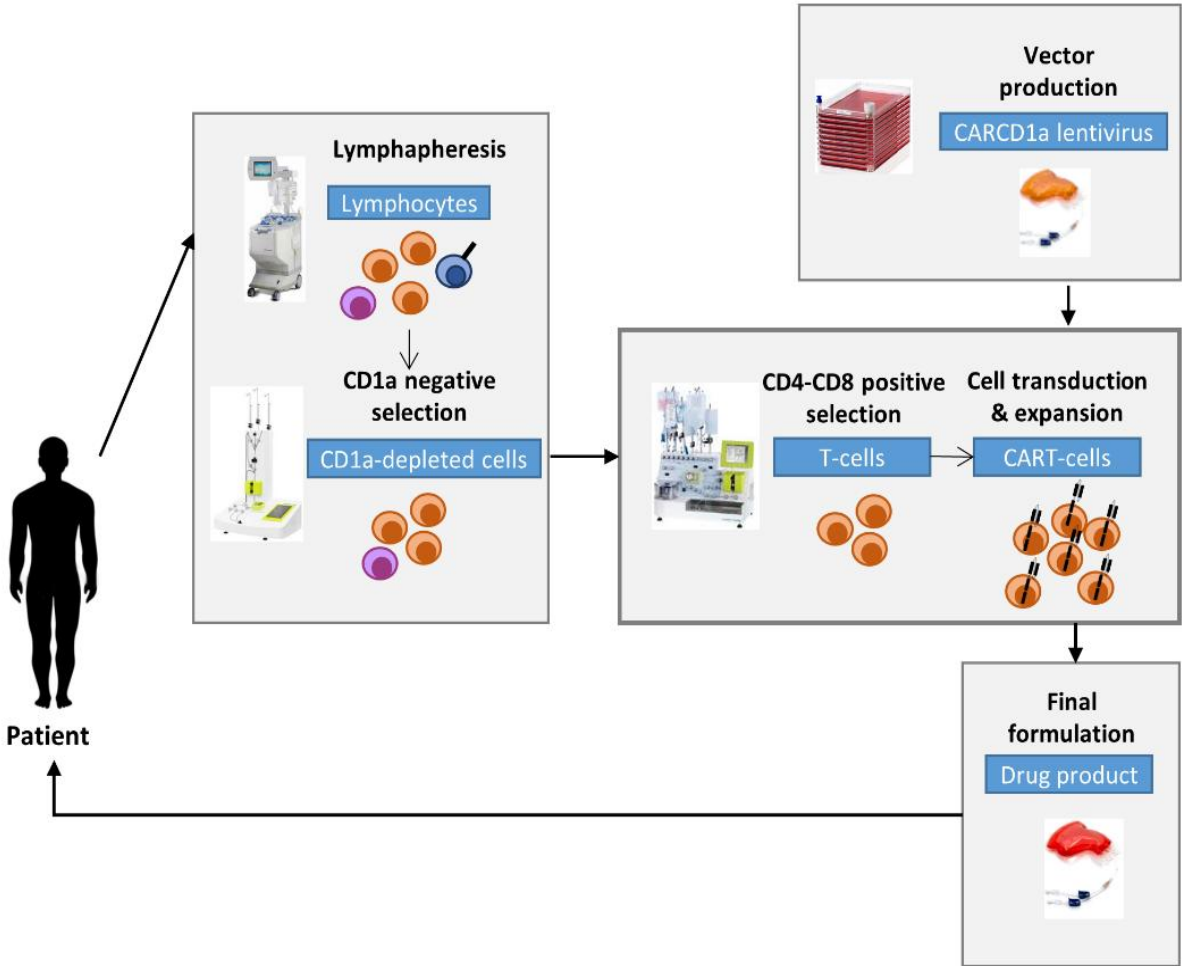




- **CD1a CAR T-cells are able to control the leukemia** and they circulate in high numbers after 7 weeks.
- **CD1a CAR T-cells remain functional (active and proliferative) after 7 weeks** as confirmed by their capacity to control a re-transplanted leukemia in the treated mice.

The model mimics the reappearance of tumor cells in refractory patients and supports the hypothesis that OC-1 can prevent relapse in T-ALL patients.

# OC-1 GMP-Manufacturing process

## Manufacturing of the autologous CAR-T product




OC-1 is manufactured from coT-ALL **patient apheresis**.

The **process is automated**, based on the **Miltenyi Prodigy™**, ensuring high levels of consistency and low batch-to-batch variability.

The overall process is very similar to other autologous αβ CAR-T products, but with the **removal of blasts** from the starting material.

CD1a is not expressed by blood-derived αβ T-cells, so **fratricide is not an issue**.

The specifications include a **potency assay** to ensure functionality.

The automated manufacturing process yields large numbers of highly active cells from patient apheresis

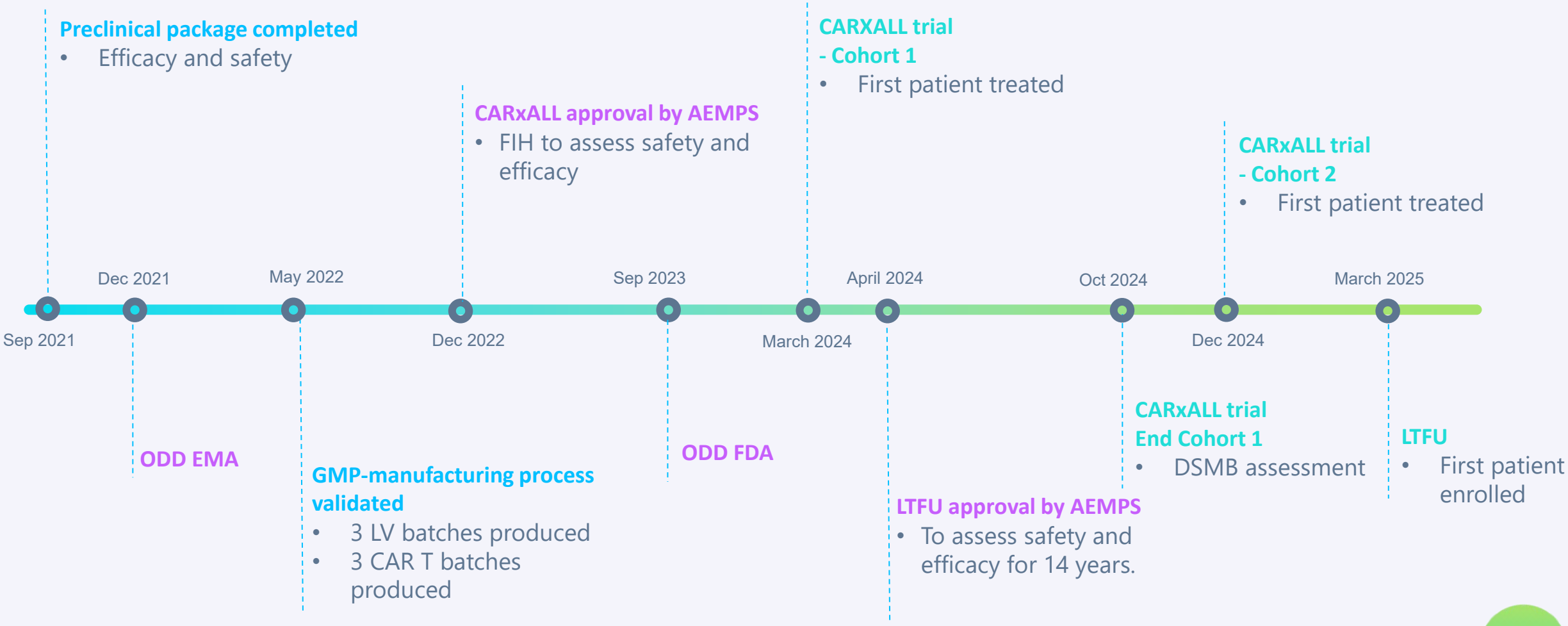
# OC-1 CARxALL Trial

FIH clinical trial currently recruiting adult and pediatric patients (EU CT N 2024-514591-40-00)

- **Study design:** Exploratory, open-label, single-arm, multicenter, dose-escalation study to assess the safety and preliminary efficacy of OC-1, in patients with R/R T-ALL.
- **Indication**: Primary refractory or refractory relapse CD1a(+) T-ALL/LL patients without standard salvage therapeutic option and after a minimum of two standard therapy lines (children and adults).
- **Dose-escalation design**: 4 dose levels, 3 + 2 design. Fractionated administration of the product.
- **Sample size**: The planned number of treated patients will be 12-20.
- **Study centers**: Hospital Clínic of Barcelona (adult pts) and Hospital Sant Joan de Déu (pediatric pts).

The first patient was treated in March 2024, and we are generating strong interim data

# OC-1 Milestones Achieved



# OC-1 Patent Portfolio

Broad protection for targeting CD1a and the humanised binder independently

| Title | Patent Family | Priority Date | Countries Applied and Status |
|---|---|---|---|
| **CAR T-cells for the treatment of CD1a-positive cancer** | WO2020/165350 | 14/02/2019 (EP 19 382 104.8) | **Under Examination**: CA, CN, EP, IN, MX, NZ, HK (depends on EP/CN) **Granted**: US, AU, JP |
| **Humanized CD1a targeting moiety for the treatment of CD1a-positive cancer** | WO2023/161530 | 28/2/2022 (EP 22 382 174.5)<br><br>17/6/2022 (EP 22 382 583.7) | **Pre-Examination**: AU, CA, JP, NZ, KR **Under Examination**: CN, EP, IN, IL, MX, SG, US, HK (Depends on EP) |

We are pursuing an aggressive IP strategy to ensure broad international protection for the product and the method of treatment

# OC-1 Risk assessment

## IDENTIFIED RISK

- Difficulties in recruiting sufficient patients due to rarity of disease.
- Poor prognosis and aggressive disease in R/R T-ALL patients.
- Risk of cytokine release syndrome (CRS) and neurotoxicity.

## MITIGATION STRATEGY

- ✓ Establish national/international expert networks.
- ✓ Amend protocol to include broader patient population (earlier line patients).
- ✓ Fractionated dose administration.

# The Competitive Landscape in T-cell Leukaemia

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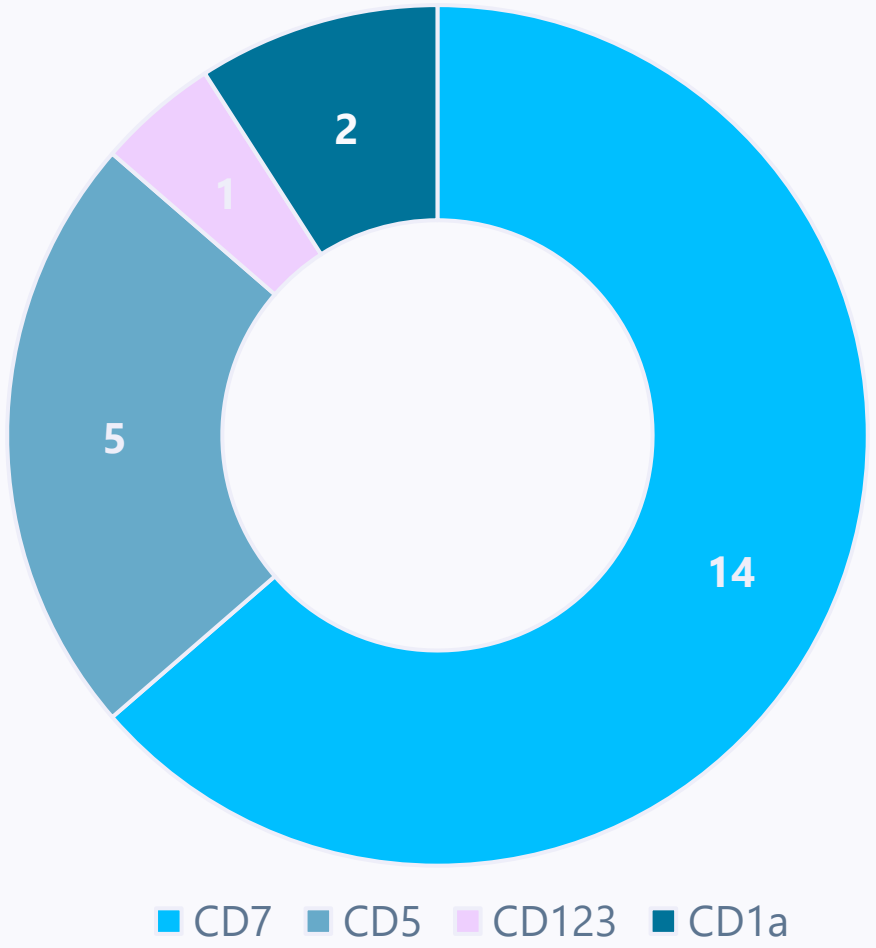
## COMPETITIVE ADVANTAGES

- Around 70 interventional clinical trials are ongoing (clinicaltrials.gov). Of those, 22 studies are CAR-T therapies.
- Our OC-1 product targets cortical T-cell leukaemia
- Advantages over the competition:
  - **No risk of leukopenia** like competing anti-CD7 & CD5 CAR-T
    - Due to the leukopenia, anti-CD7/CD5 CAR-T treatments must be followed by a HSCT.
  - **Limited expression** on other healthy tissues
  - No risk of **fratricide** (CAR-Ts killing each other)
  - CD1a is a **commonly used marker** in clinical practice
  - **Automated** GMP manufacturing process

## CAR-T PIPELINE PRODUCTS




Our single and dual CAR products are designed to be highly efficacious and will not need a HSCT

Source: Clinicaltrials.gov

# OC-1 Partnering Opportunities

OneChain Immunotherapeutics is open to multiple partnering options

Our goal is to maximise patient access and deliver a solution for this high unmet medical need

- ✓ **Product**: Autologous CAR T CD1a Immunotherapy for r/r coT-ALL currently in FIH clinical trials.
- ✓ **Out-licensing**: Our plan is to license the product to a larger company that can execute the Pivotal trial and commercialise the product
- ✓ **Geography**: Worldwide or specific geographies TBD
- ✓ **Indications**: R/R T-cell Acute Lymphoblastic Leukaemia. **Additional indications**: Langerhans cell histiocytosis; Histiocytic sarcoma.
- ✓ **Follow-on product dual-CAR OC-1d**: Option can be included in license for OC-1.
- ✓ **Deal structure and terms**: We are open to multiple scenarios that help accelerate development and commercialization. OneChain can participate in all stages of development.
- ✓ **Exclusivity**: Available for all Fields and Geographies.

Email stefanos@onechaintx.com to discuss partnering opportunities

# OC-1 Summary

A differentiated CAR-T product targeting a high unmet medical need

## PRODUCT

- ✓ **Innovative**: Targets CD1a, a unique antigen with multiple advantages over competing products.
- ✓ **Automated manufacturing**: Process based on the Miltenyi Prodigy™ is state-of-the art in the field.
- ✓ **Unmet medical need**: r/r T-ALL/LL is an indication with very few therapeutic options.
- ✓ **Differentiated**: Potential Best-in-Class treatment.
- ✓ **Improvements**: Follow-on product OC-1d targets more patients.

## PROGRESS

- ✓ **ODD**: Granted in the US and EU.
- ✓ **Phase 1 Clinical trial**: Dose escalation trial ongoing with highly encouraging results from lowest doses.
- ✓ **Safety**: No significant safety concerns, except CRS (fully resolved) that is common with CAR-Ts and indicates functionality.
- ✓ **Next Milestone**: Expect to be treating patients within DL3 within 2025
- ✓ **Partnering Opportunity**: Open to all licensing discussions that help accelerate development and patient access.

Email stefanos@onechaintx.com to discuss partnering opportunities

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