DATA REPORT

ATRACT™ T-CELL ACTIVATION KIT

Redefining T-cell activation.

Produced by Bio-ReCell
2026

Bio-ReCell®

Bio-ReCell®

Every activation system is designed to activate T cells.
Not to leave the process afterward.

Atract™ Kit was designed differently.

- REMOVABLE PARTICLES
- NO PHAGOCYTIC UPTAKE
- IMPROVED MANUFACTURABILITY
- ENHANCED CYTOTOXIC FUNCTION

ATRACT™ T-CELL ACTIVATION KIT

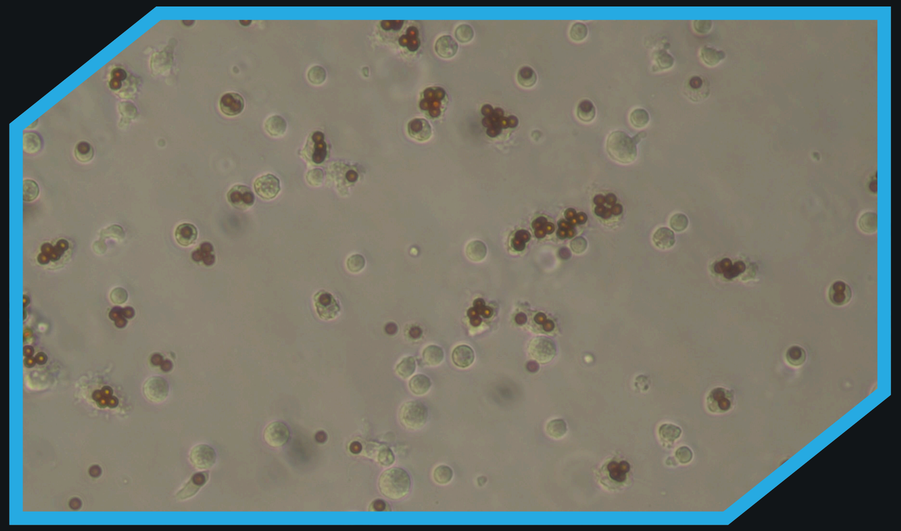
A strategic, non-magnetic alternative.

1. No magnetic components.
2. Biocompatible composites with covalently bound antibodies.
3. No detectable residual antibodies (below LLOQ/LOD).
4. Resistant to phagocytosis, ensuring a pure and clean final cell product.
5. Simple and quick protocol with no special equipment required.

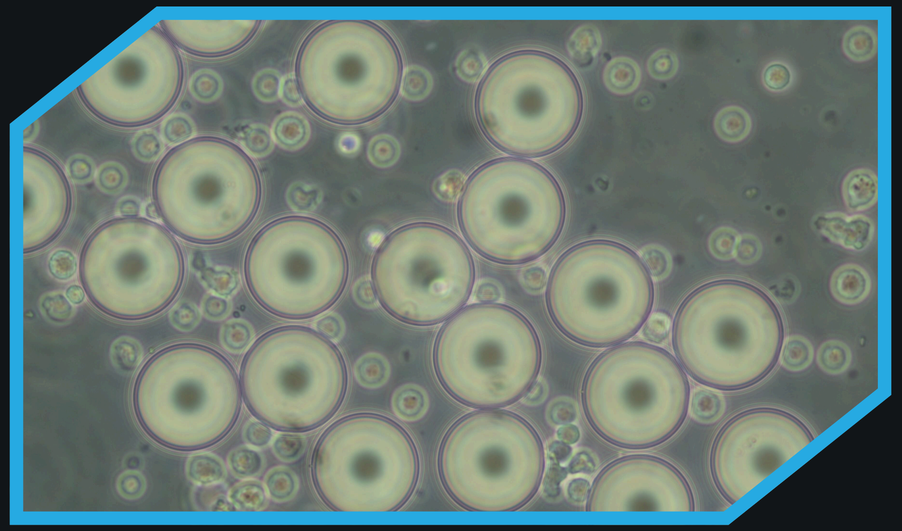
Bio-ReCell®

ATRACT™ REAGENT PARTICLES ARE 5X BIGGER THAN CELLS.

1. Easy filtration with commercially available 20 um filters with no residuals.
2. Non-phagocytosable particles.
3. Without residuals, no downstream cleaning steps are necessary, saving you time and money.



COMPETITOR

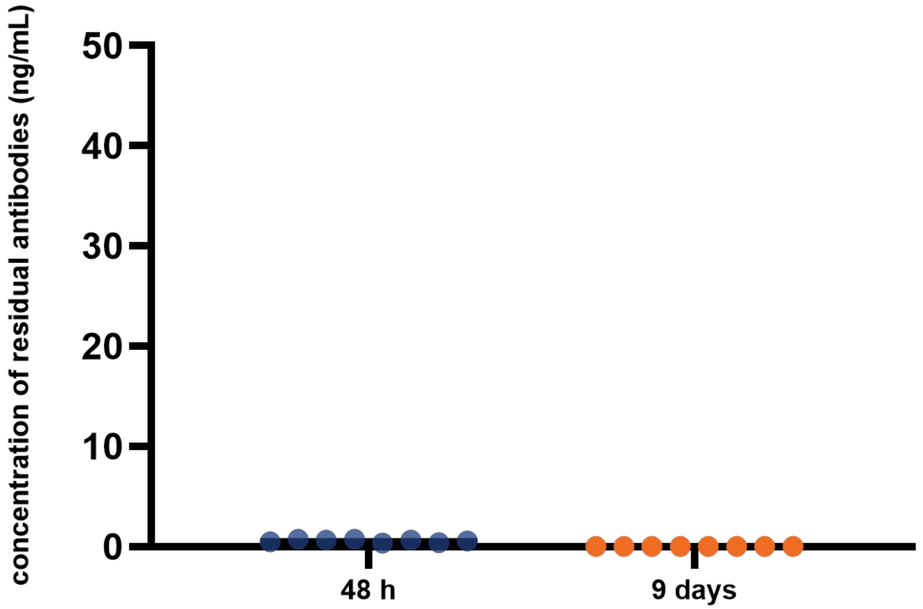


ATRACT™ KIT

NO RESIDUALS

After 48 hours or 9 days of activation and expansion, final cell solution was sampled and tested with anti-mouse IgG ELISA.

Concentration of residual antibodies is comparable with negative control and are below lower limit of quantification and also lower limit of detection.



Concentration of Residual Antibodies
in final cell solution.

Bio-ReCell®

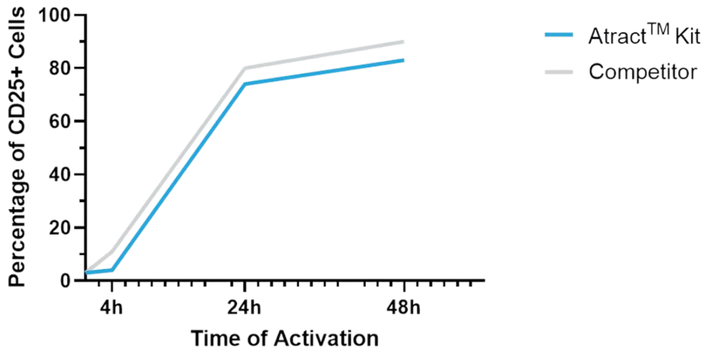
Atract™ Kit was extensively tested across different:

SCALES | PLATFORMS | SAMPLES | MEDIA | β-TESTERS

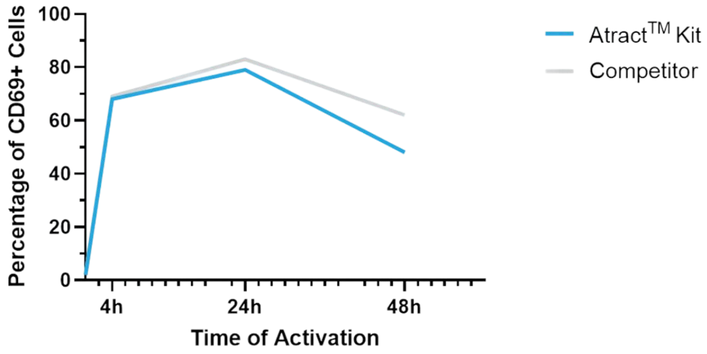
These are the results.

ATRACT™ ACHIEVES COMPARABLE PERFORMANCE DURING ACTIVATION TO MARKET-LEADING COMPETITOR DURING ACTIVATION.

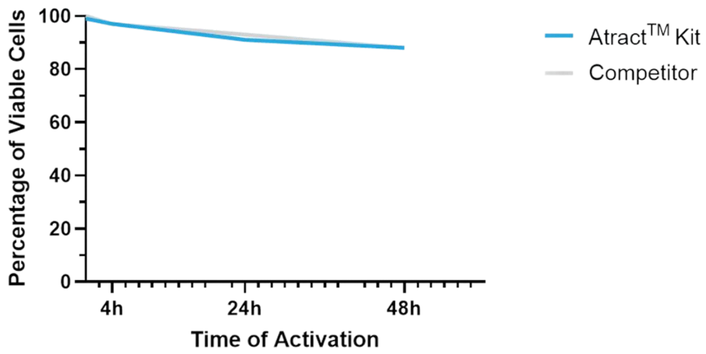
ACTIVATION PROFILE OF T CELLS DURING 48h:
expression of CD25, expression of CD69 and cell viability.



Expression of CD25
during 48h activation period.



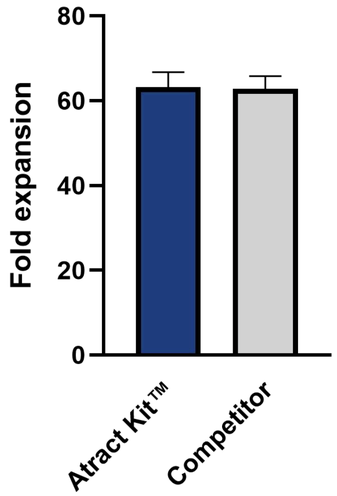
Expression of CD69
during 48h activation period.



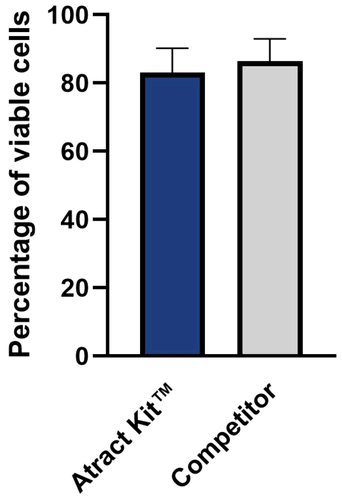
Viability of Cells
during 48h activation period.

ATRACT™ ACHIEVES COMPARABLE PERFORMANCE AFTER EXPANSION TO MARKET-LEADING COMPETITOR IN G-REX PLATFORM.

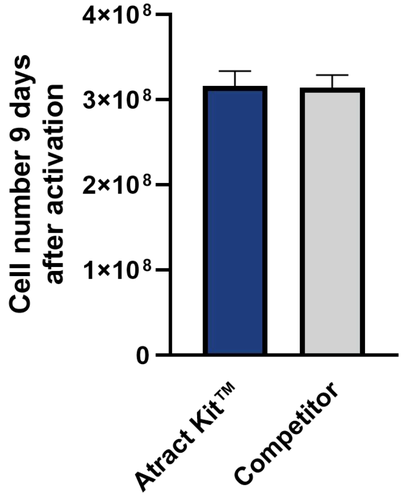
EXPANSION DATA AFTER 9 DAYS:
fold expansion, cell number and viability of cells.



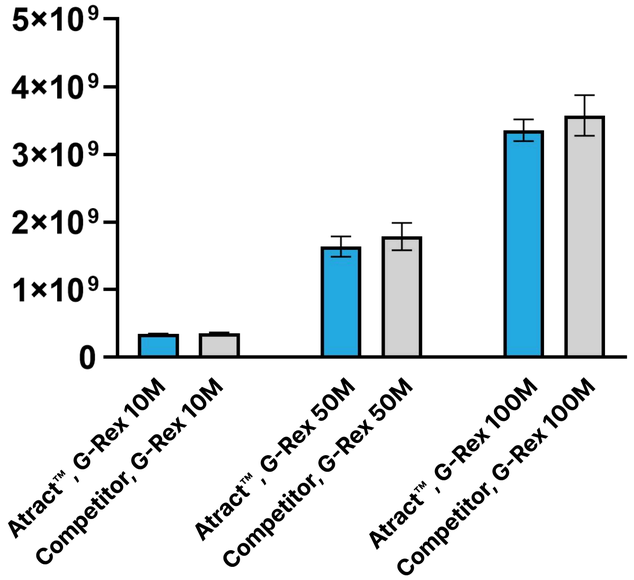
Fold Expansion
on day 9 in G-Rex platform.



Viability of Cells
on day 9 in G-Rex platform.



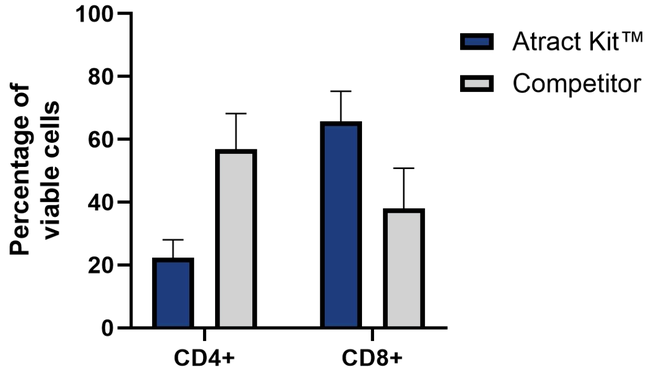
Cell Number
on day 9 in G-Rex platform.

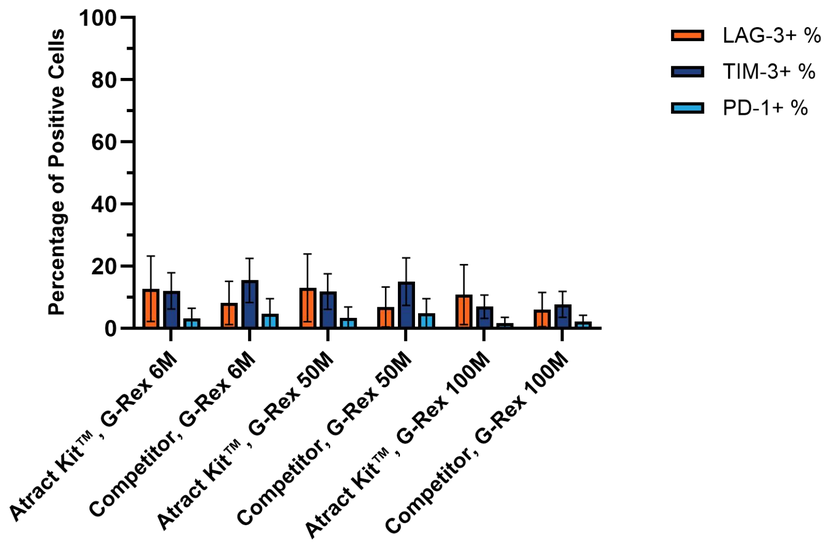


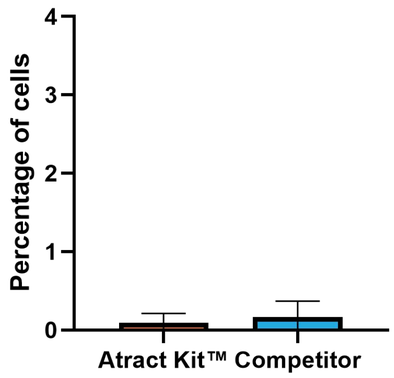
Cell Scalability
on day 9 in G-Rex platform.

ATRACT™ ACHIEVES COMPARABLE PERFORMANCE AFTER EXPANSION TO MARKET-LEADING COMPETITOR.

EXPANSION DATA AFTER 9 DAYS:
CD4:CD8 ratio, exhaustion markers and CD19+.







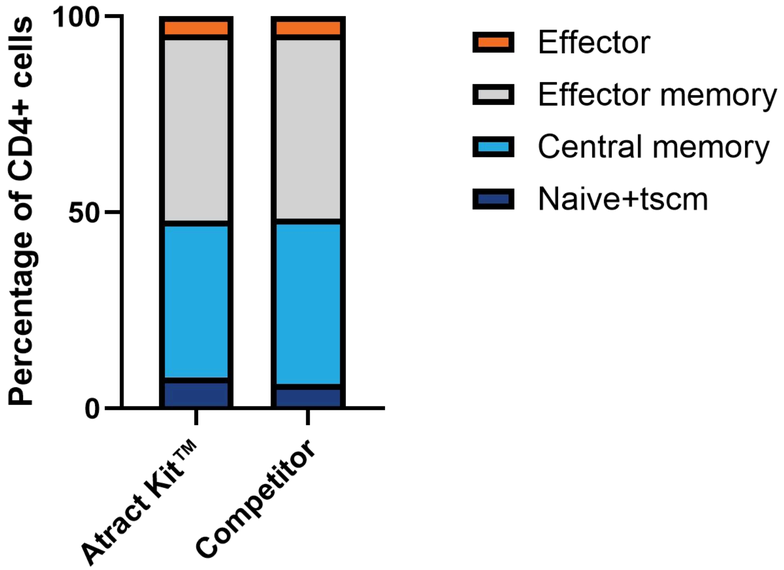
CD4:CD8 Ratio
With Atract™ Kit, CD8:CD4 ratio leans toward CD8.

Exhaustion Marker Expression
Comparable exhaustion marker expression levels.

CD19+ % on day 9.
Low CD19+ percentage.

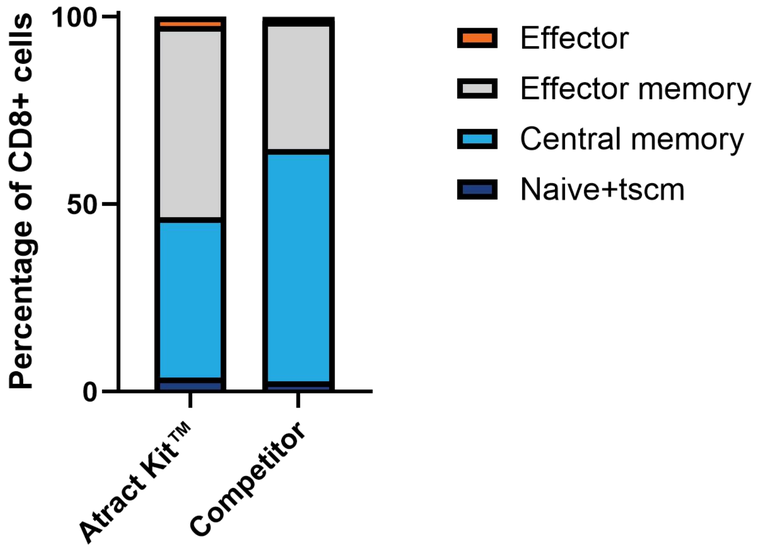
ATRACT™ ACHIEVES COMPARABLE PERFORMANCE AFTER EXPANSION TO MARKET-LEADING COMPETITOR.

EXPANSION DATA AFTER 9 DAYS: CD4 subtypes and CD8 subtypes.



CD 4 Subtypes

Comparable CD4 subtypes on day 9.



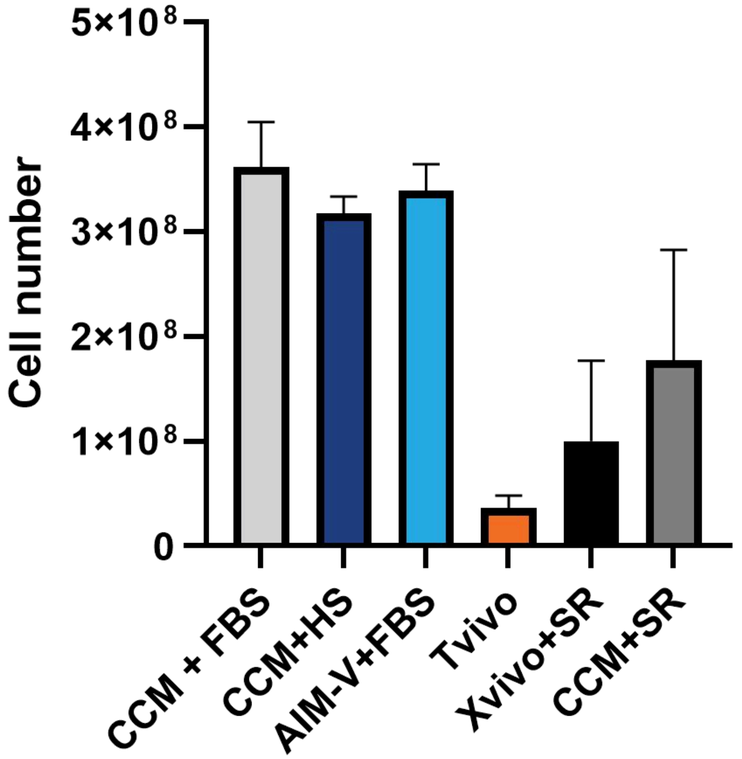
CD8 Subtypes

Comparable CD8 subtypes on day 9.

Bio-ReCell®

TESTED MEDIA

1. GMP Human T Cell Media, cat no.: CCM038-GMP-1L with FBS (Fetal bovine serum, value, heat inactivated, Cat. No.: A5256801).
2. GMP Human T Cell Media, cat no.: CCM038-GMP-1L with Human AB Serum Plasma-derived Male Pooled, 0,1 um Filtered Heat-Inactivated, Cat. No.: HUMANABSRMP-HI-1)
3. CTS AIM-V Medium, cat no.: A38308-01 with FBS (Fetal bovine serum, value, heat inactivated, Cat. No.: A5256801)
4. TheraPEAK T-VIVO Medium, cat. No.:BP12-970Q
5. X-Vivo 15 medium, cat. No.: BEBP02-054Q with Serum replacement (CTS Immune Cell SR, Cat. No.: A2596101)
6. GMP Human T Cell Media, cat no.: CCM038-GMP-1L with serum replacement (CTS Immune Cell SR, Cat. No.: A2596101)



Cell Number

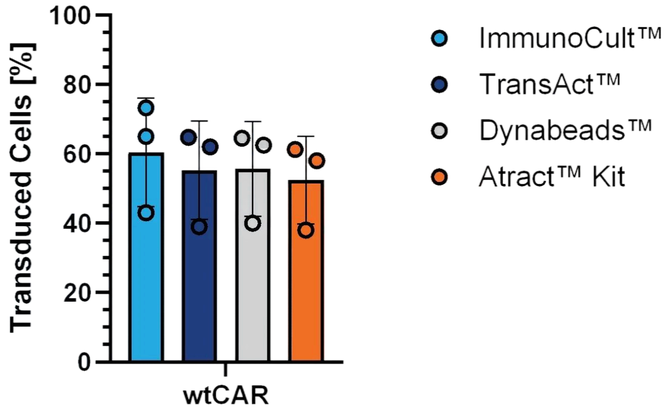
9 days after activation in 6M G-Rex

Bio-ReCell®

In addition to in-house testing, The National Institute of Chemistry (Slovenia) and the Faculty of Medicine (University of Ljubljana) evaluated Atract™ Kit's potential for CAR-T therapy.

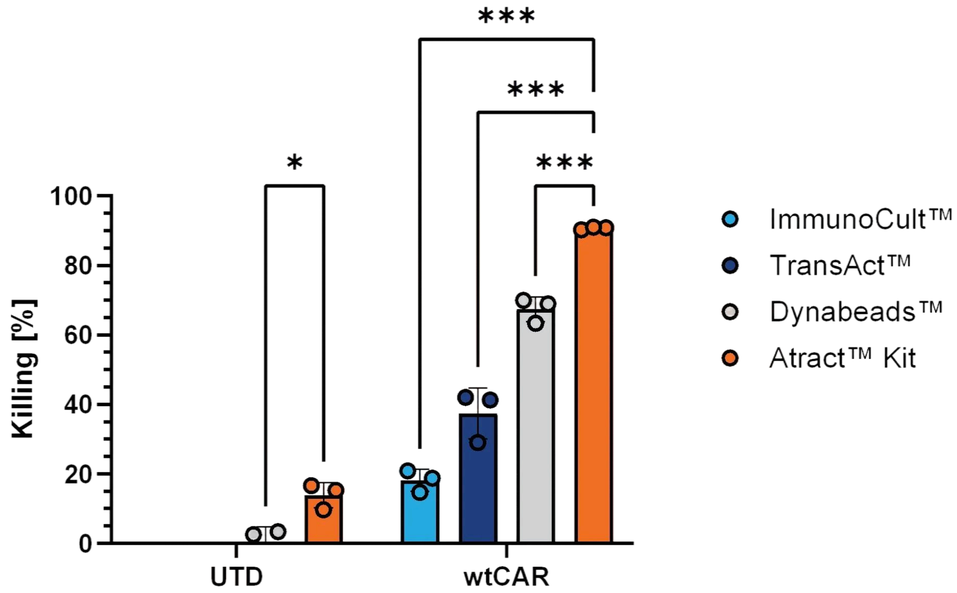
ATRACT™ KIT PERFORMANCE IN CAR-T CELL PRODUCTION, EVALUATED BY THE NATIONAL INSTITUTE OF CHEMISTRY

ATRACT™ KIT COMPARED TO MARKET-LEADING T-CELL ACTIVATION SYSTEMS: ImmunoCult™, TransAct™, Dynabeads™



CAR Transduction Efficiency

Transduction efficiencies were comparable across all conditions.

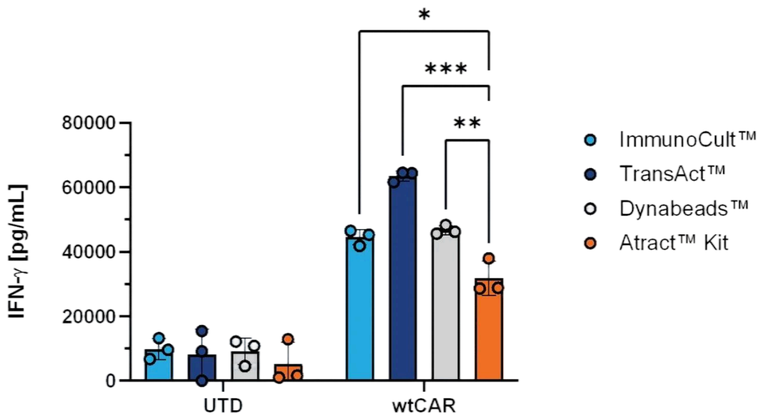


CAR-T Killing Assay

CAR-T cells, activated by Atract™ Kit, show significantly higher killing performance than other tested reagents.

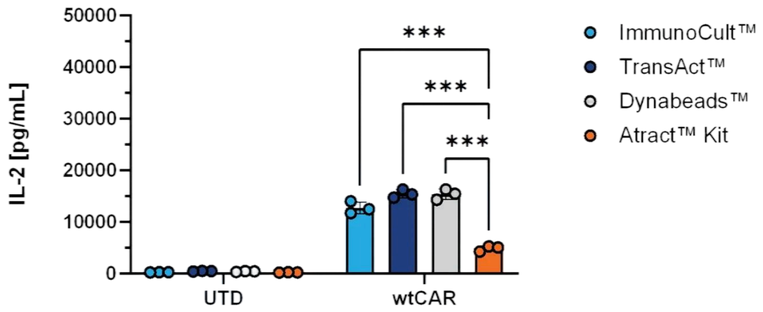
ATRACT™ KIT PERFORMANCE IN CAR-T CELL PRODUCTION, EVALUATED BY THE NATIONAL INSTITUTE OF CHEMISTRY

Cells, activated by Atract™ Kit, secrete significantly less pro-inflammatory cytokines, reducing the risk for negative, inflammation-related side effects, while maintaining a high level of granzyme B secretion, thus providing a strong cytotoxic response.



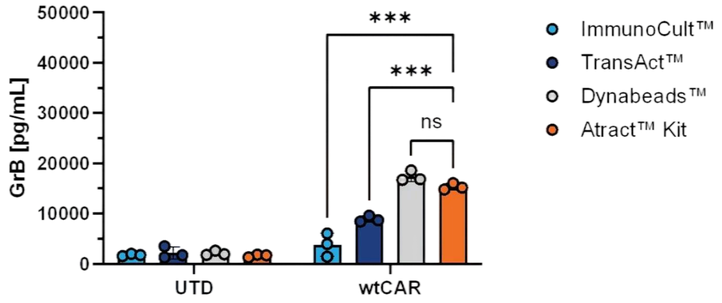
Interferon γ Secretion

Significantly lower IFNγ release compared to tested competitors .



Interleukin 2 Secretion

Significantly lower IL-2 secretion compared to tested competitors.

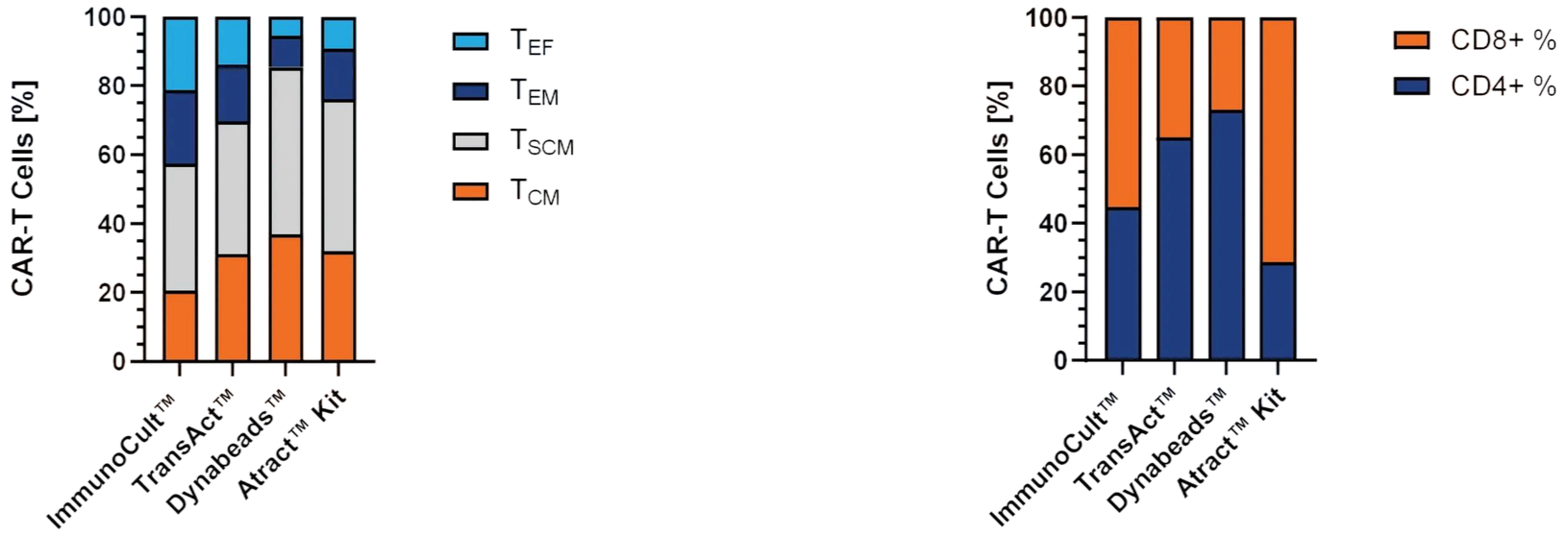


Granzyme B Secretion

Higher GrB secretion compared to Immunocult™ and TransAct™, comparable to Dynabeads™.

ATRACT™ KIT PERFORMANCE IN CAR-T CELL PRODUCTION, EVALUATED BY THE NATIONAL INSTITUTE OF CHEMISTRY

Atract™ Kit activation produces cells with a favourable phenotype, rich in less-differentiated memory subtypes (Tscm, Tcm), ensuring greater population fitness and longevity.

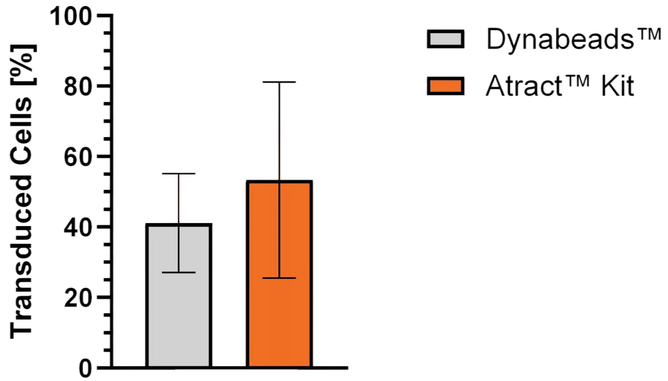


CAR-T Cell Functional Subtypes and CD4:CD8 Ratio

Cells, activated with Atract™ Kit, are less differentiated than cells activated with ImmunoCult™ and phenotypically similar to those activated with TransAct™ or Dynabeads™. CD4+ and CD8+ cell ratio is inclined towards cytotoxic cells when activated with Atract™ Kit.

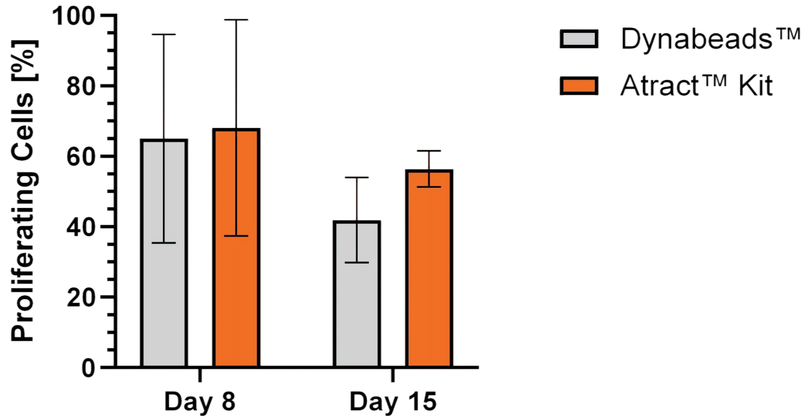
ATRACT™ KIT CAR-T PERFORMANCE ON PATIENTS, EVALUATED BY THE FACULTY OF MEDICINE (UNIVERSITY OF LJUBLJANA)

Atract™ Kit activation in the scope of CAR-T therapy production was independently evaluated by researchers at the **Institute of Microbiology and Immunology (Faculty of Medicine)**, using samples derived from **Acute Lymphoblastic Leukemia** (ALL) patients.



Transduction Efficiency

Atract™ Kit enables higher percentage of successfully transduced patient cells than Dynabeads™.



CD3+ Cell Proliferation

Cells, activated by Atract™ Kit, had a prolonged proliferation phase compared to those, activated by Dynabeads™.

ATRACT™ KIT CAR-T PERFORMANCE SUMMARY OF EVALUATION, PERFORMED BY THE NATIONAL INSTITUTE OF CHEMISTRY (SLOVENIA) AND THE FACULTY OF MEDICINE (UNIVERSITY OF LJUBLJANA)

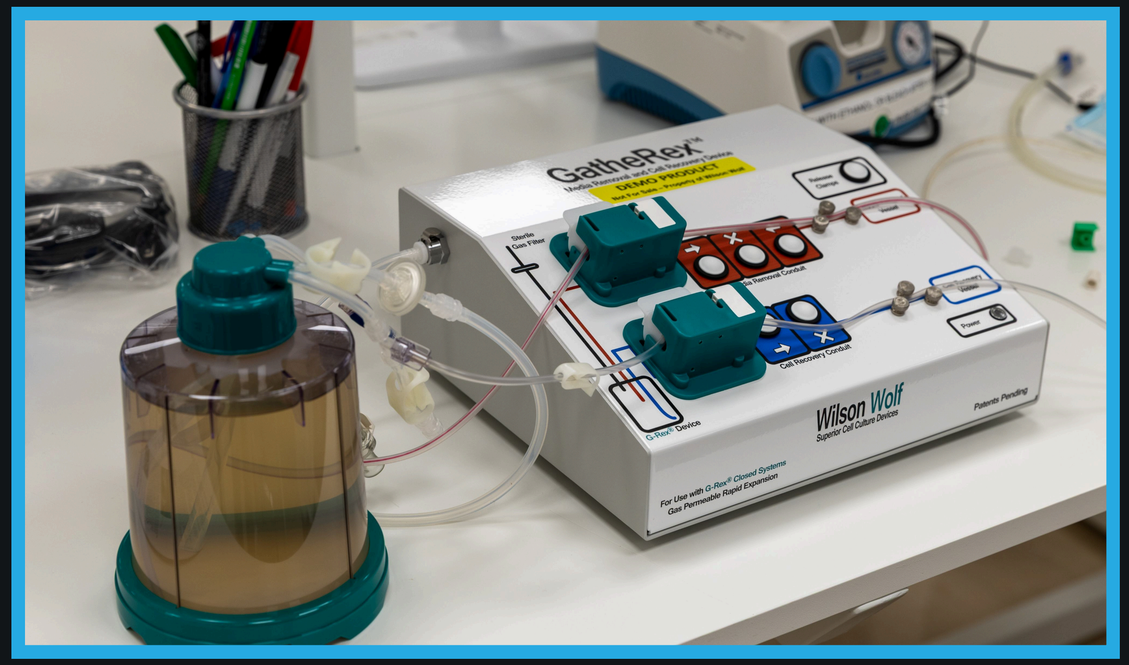
Collaboration with two academic groups at the forefront of Slovenia's oncological research showed that the Atract™ Kit performs well as an activation agent in CAR-T cell therapy production. The kit was tested on both healthy donor samples and patients with ALL, showing high transduction, prolonged proliferation and strong cytotoxic capacity.

Cells, activated with the Atract™ Kit, possessed a broadly less differentiated phenotype than other tested activation reagents. Cytokine release assays displayed lower expression of pro-inflammatory cytokines with high granzyme B production. These results indicate that activation with the Atract™ Kit ensures potent cytotoxicity with lower cytokine-associated risks.

In summary, the Atract™ T-Cell Activation Kit enables the generation of highly potent CAR-T cells with favourable, memory-rich composition and reduced inflammatory signaling, supporting an improved efficacy and safety profile, outperforming industry-leading activation products.

TRANSITION FROM OPEN TO CLOSED-SYSTEM

End of 2025 saw a successful transition to a closed system, tested in G-Rex® 100M Closed System.

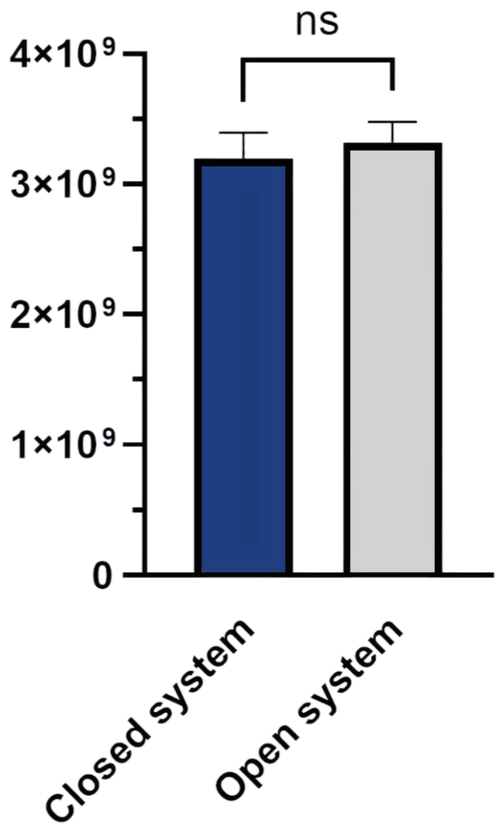


G-Rex® 100M CS harvesting with GatheRex Liquid Handling, Cell Harvest Pump

Media: GMP Human T Cell Media, cat no.: CCM038-GMP-1L with Human AB Serum Plasma-derived Male Pooled, 0,1 um Filtered Heat-Inactivated, Cat. No.: HUMANABSRkMP-HI-1)

GMP version of the kit with closed system packaging is coming in 2026.

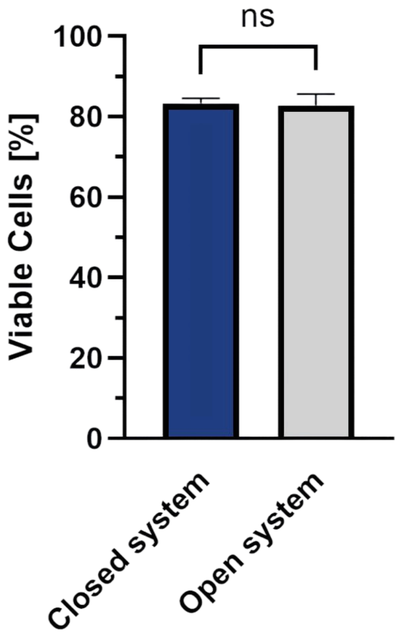
Bio-ReCell®



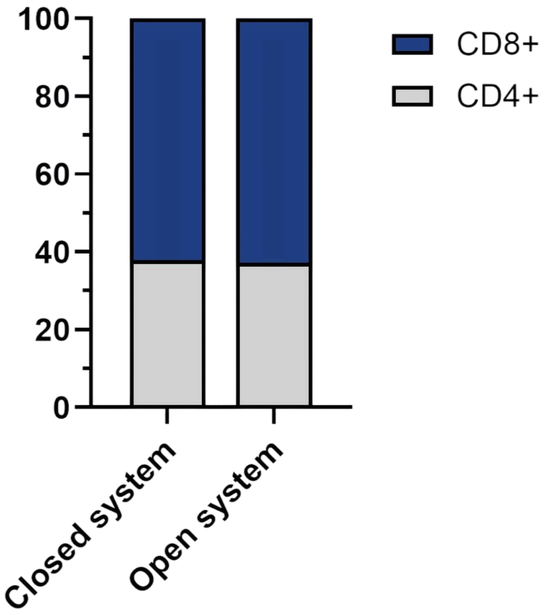
Cell Number

9 days after activation (n=3)

ATRACT™ CLOSED-SYSTEM KIT ACHIEVES COMPARABLE PERFORMANCE TO OPEN-SYSTEM VERSION IN G-REX®

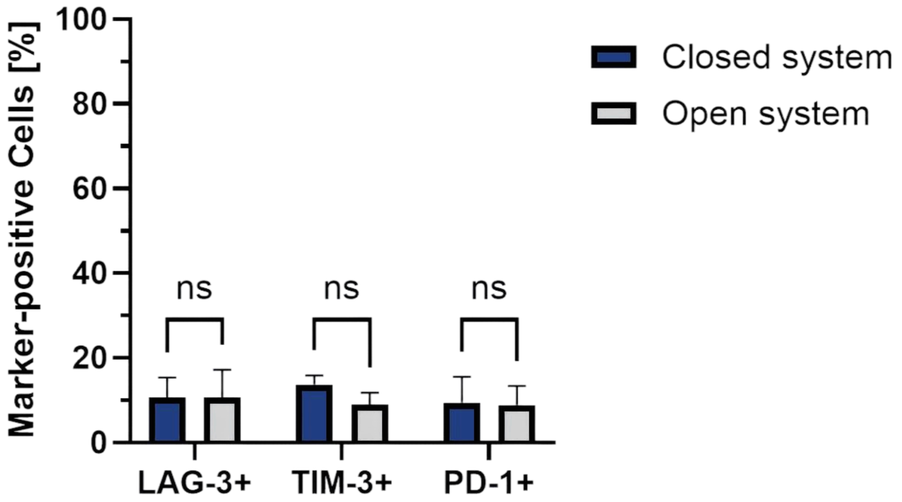


Cell Viability
on day 9 in G-Rex® platform.

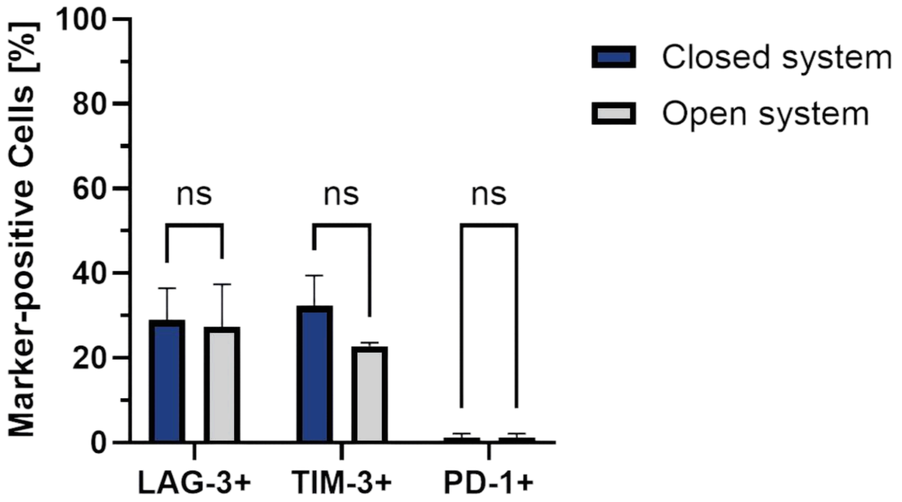


CD8+/CD4+ Ratio
on day 9 in G-Rex® platform.

ATRACT™ CLOSED-SYSTEM KIT ACHIEVES COMPARABLE PERFORMANCE TO OPEN-SYSTEM VERSION IN G-REX®



CD4+ Exhaustion
on day 9 in G-Rex® platform.



CD8+ Exhaustion
on day 9 in G-Rex® platform.

Browse through our whitepapers to learn more about the Atract™ Kit.

1. Assessing Linear Scalability of Atract™ T-Cell Activation Kit in G-Rex® Bio-Reactors
2. Evaluating a Simplified One-Step T-Cell Activation Protocol with the Atract™ Kit V2 on the G-Rex® Platform.
3. No compromise in cell expansion: Atract™ Kit T-cell activation reagent performance in closed G-Rex® systems

WHITE PAPER

Assessing Linear Scalability of Atract™ Kit Activation in G-Rex® Bioreactors

INTRODUCTION

Bio-ReCell, in collaboration with ScaleReady, conducted a study to evaluate the linear scalability of Atract™ Kit in G-Rex® bioreactors.

Atract™ Kit V2 addresses common challenges in T-cell manufacturing – such as QC issues from residual particles, time-consuming washing, and variable performance in monocyte-rich samples. Its non-phagocytosable, easily filterable particles are five times larger than cells, ensuring clean, consistent activation across scales, platforms, samples, and media, without proprietary lock-ins. Combined with the G-Rex® platform's efficient high-density culture and minimal handling, this creates a scalable and adaptable foundation for CAR-T research and manufacturing. The goal was to confirm consistent T-cell activation and expansion when scaling from G-Rex®6M Well Plates to larger formats such as G-Rex®50M and G-Rex®100M, within an open system using GMP-compliant reagents. A white paper summarizing findings of the study will support Atract™ Kit's application in scalable manufacturing workflows.

OBJECTIVE

To validate the performance and linear scalability of T-cell activation using Atract™ Kit V2 in G-Rex®6M, G-Rex®50M, and G-Rex®100M systems, with a focus on consistency of activation and expansion across increasing vessel volumes.

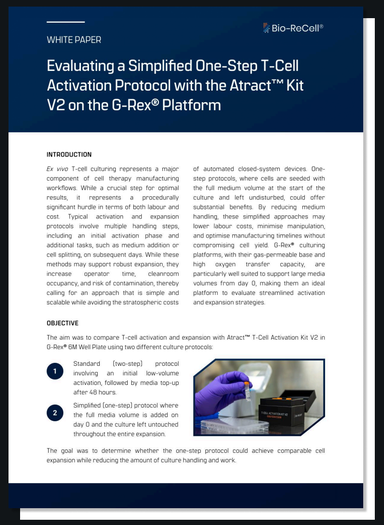
ABOUT ATRACT™

Atract™ Kit is a T-cell activation reagent composed of biocompatible, magnet-free particles that are irreversibly bound with anti-CD3, anti-CD28, and anti-CD2 antibodies. These particles are designed to interact with naive T lymphocytes, triggering their activation and expansion. The reagent particles cannot be phagocytosed and can be easily removed from the cell culture.

Figure 1 Atract™ T-Cell Activation Kit V2

1

DOWNLOAD



WHITE PAPER

Evaluating a Simplified One-Step T-Cell Activation Protocol with the Atract™ Kit V2 on the G-Rex® Platform

INTRODUCTION

Ex vivo T-cell culturing represents a major component of cell therapy manufacturing workflows. While a crucial step for optimal results, it represents a procedurally significant hurdle in terms of both labour and cost. Typical activation and expansion protocols involve multiple handling steps, including an initial activation phase and additional tasks, such as medium addition or cell splitting, on subsequent days. While these methods may support robust expansion, they increase operator time, cleanroom occupancy, and risk of contamination, thereby calling for an approach that is simple and scalable while avoiding the stratospheric costs of automated closed-system devices. One-step protocols, where cells are seeded with the full medium volume at the start of the culture and left undisturbed, could offer substantial benefits. By reducing medium handling, these simplified approaches may lower labour costs, minimise manipulation, and optimise manufacturing timelines without compromising cell yield. G-Rex® culturing platforms, with their gas-permeable base and high oxygen transfer capacity, are particularly well suited to support large media volumes from day 0, making them an ideal platform to evaluate streamlined activation and expansion strategies.

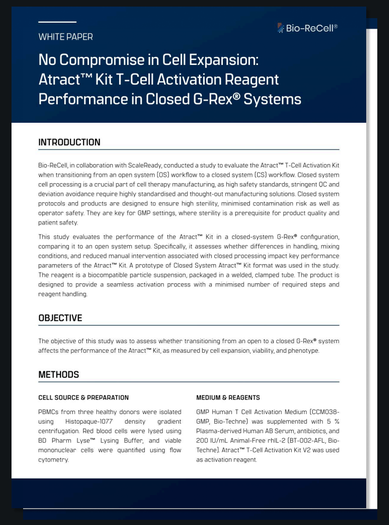
OBJECTIVE

The aim was to compare T-cell activation and expansion with Atract™ T-Cell Activation Kit V2 in G-Rex® 6M Well Plate using two different culture protocols:

1. Standard (two-step) protocol involving an initial low-volume activation, followed by media top-up after 48 hours.
2. Simplified (one-step) protocol where the full media volume is added on day 0 and the culture left untouched throughout the entire expansion.

The goal was to determine whether the one-step protocol could achieve comparable cell expansion while reducing the amount of culture handling and work.

DOWNLOAD



WHITE PAPER

No Compromise in Cell Expansion: Atract™ Kit T-Cell Activation Reagent Performance in Closed G-Rex® Systems

INTRODUCTION

Bio-ReCell, in collaboration with ScaleReady, conducted a study to evaluate the Atract™ T-Cell Activation Kit when transitioning from an open system (CS) workflow to a closed system (CS) workflow. Closed system cell processing is a crucial part of cell therapy manufacturing, as high safety standards, stringent QC and deviation avoidance require highly standardised and thought-out manufacturing solutions. Closed system protocols and products are designed to ensure high sterility, minimised contamination risk as well as operator safety. They are key for GMP settings, where sterility is a prerequisite for product quality and patient safety.

This study evaluates the performance of the Atract™ Kit in a closed-system G-Rex® configuration, comparing it to an open system setup. Specifically, it assesses whether differences in handling, mixing conditions, and reduced manual intervention associated with closed processing impact key performance parameters of the Atract™ Kit. A prototype of Closed System Atract™ Kit format was used in the study. The reagent is a biocompatible particle suspension, packaged in a welded, clamped tube. The product is designed to provide a seamless activation process with a minimised number of required steps and reagent handling.

OBJECTIVE

The objective of this study was to assess whether transitioning from an open to a closed G-Rex® system affects the performance of the Atract™ Kit, as measured by cell expansion, viability, and phenotype.

METHODS

CELL SOURCE & PREPARATION

PBMCs from three healthy donors were isolated using Histopaque-1077 density gradient centrifugation. Red blood cells were lysed using BD Pharm Lyse™ Lysing Buffer, and viable mononuclear cells were quantified using flow cytometry.

MEDIUM & REAGENTS

GMP Human T Cell Activation Medium (CCM038-GMP, Bio-Techne) was supplemented with 5 % Plasma-derived Human AB Serum, antibiotics, and 200 IU/mL Animal-Free rhIL-2 (BT-002-AFL, Bio-Techne). Atract™ T-Cell Activation Kit V2 was used as activation reagent.

DOWNLOAD

GET IN TOUCH

Bio-ReCell®

Let’s make therapies safer and cheaper together.

REQUEST A SAMPLE | COLLABORATE WITH US | ACCESS FULL DATA

sales@bio-recell.com

Bio-ReCell®

NO MAGNETS

NO IMPURITIES

NO RESIDUALS

www.bio-recell.com