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INNOVESSEL Cell Culture

InnoVessel, flourish your cell !

INNOVEL Cell Culture InnoVessel

InnoVessel™ suspension flasks are designed to provide consistent cell growth and reproducible results every time for any size application in production and research & development.

InnoVessel™ series ideal for any cell growth and amplification process and provides superior results with wide rande of human and animal cell lines, including: T Cell、CAR-T、TCR-T、TIL、NK、CAR-NK、CIK、K562、Jurkat、Raji & more.

Recommended seeding density ~5E+05 /mL, minimum seeding density 2E+05 /mL.

Cultivation Volume
10~25mL
Est. Cell Yield
2.5~4E+08

InnoVessel-30

Cultivation Volume
50~400mL
Est. Cell Yield
4~6E+09

InnoVessel-500

Cultivation Volume
150~1000mL
Est. Cell Yield
1~1.5E+10

InnoVessel-1000

- Manufactured with medical grade materials for superior transparency and biocompatibility.
- Patented double layered permeable membrane technology optimizes gas exchange for superior cell growth with cultivation density quotient over 1E+07 /mL.
- Uniquely positioned top filter is ergonomically placed to prevent accidental membrane wetting and lowers the risk of contamination.
- Supernatant removal can be performed without centrifugation to avoid damage to cells and allows optimal use of media (ImmunoVessel™ – 500 & 1,000).
- Space saving design ideal for static cultures and maximizes incubator space.
- Non-pyrogenic & sterilized with gamma irradiation.

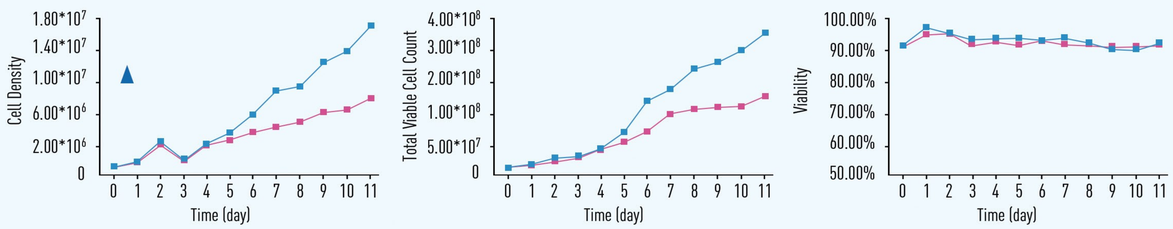
InnoVessel-30 Culture Mini-Bottle

The unique cap design with a double-layered inner sleeve membrane and a breathable outer layer promotes superior cell growth and health.

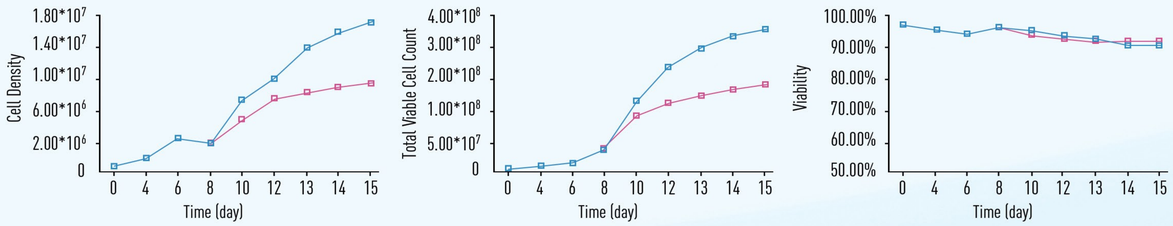
01 Culture amplification of T/CAR-T Cells in InnoVessel-30 vs. Standard T25

The recommended culture volume is 10-25mL and the recommend seeding density is ~5E+05/mL(minimum seeding density, 2E+05/mL).

T Cell



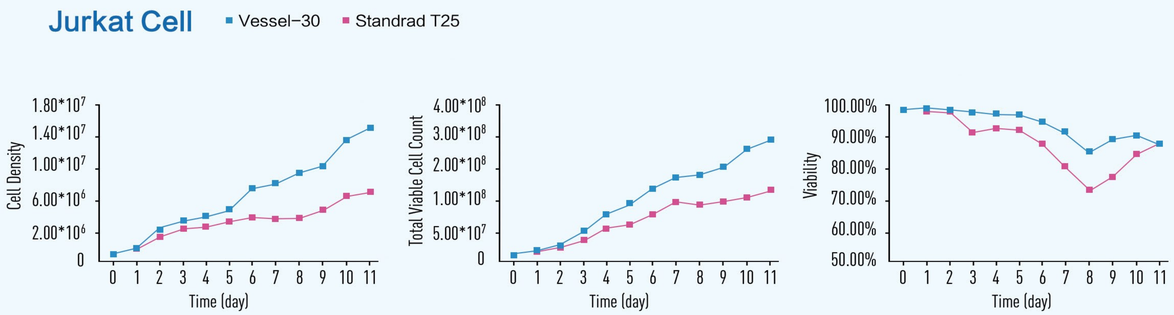
CAR-T Cell



InnoVessel-30 flasks attained high level viable cell density over 1.6E+07/mL with T/CAR-T cells achieving 2X higher yield than standard T25 flasks.

02 The Jurkat cells cultured and expanded in InnoVessel-30 and standard T25

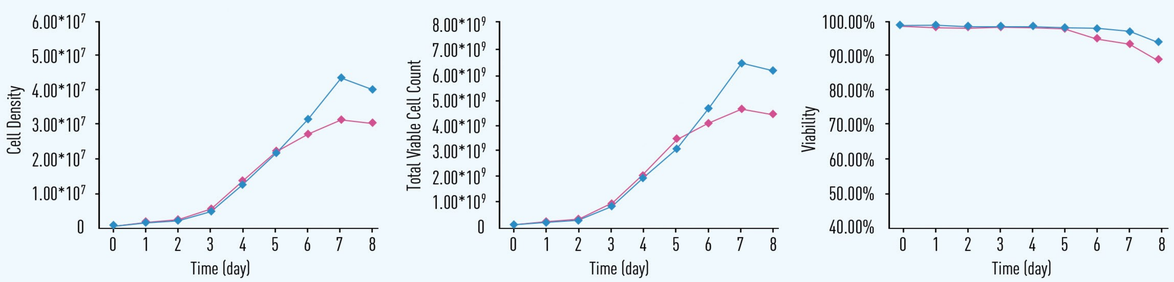
The recommended culture volume is 10-25mL and the inoculation density is ~5E+05 cells/mL.



Jurkat cells can also be cultured at high density in InnoVessel-30, reaching up to 1.6E+07 cells/mL.

03 For CHO cells cultured and expanded in InnoVessel-30, and 50mL shaker tubes

The recommended culture volume is 10-15mL, with an inoculation density of 3~5E+05 cells/mL. The shaking bed amplitude is 50mm, and the recommended speed is 120-150rpm.



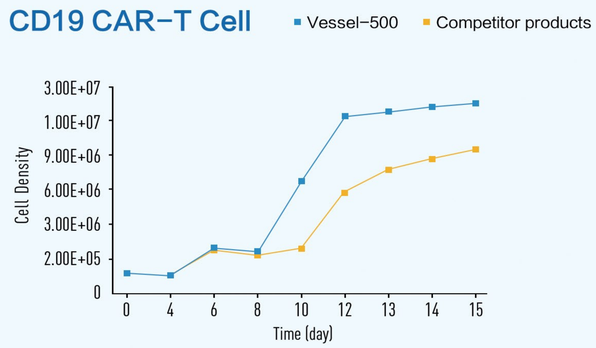
In InnoVessel-30:

CHO cell culture density can reach over 4E+07 cells/mL, significantly higher than in standard 50mL shaker tubes and comparable to the culture effect in shaker flasks.

It is recommended to use a cultivation volume of 50-400mL with a seeding density of ~5E+05 cells/mL.

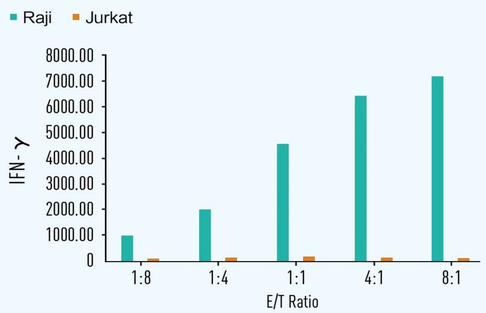
The design with an open top allows for media exchange without the need for centrifugation, avoiding potential cell damage and saving culture media. During cell harvest, a simple procedure involves settling the cells first, discarding the upper part of the culture supernatant, and then proceeding with centrifugation, making the process more straightforward and reducing the risk of contamination.

01 The cultivation and expansion of CD19 CAR-T cells were conducted in INNOVESSEL-500 and compared to alternative methods.

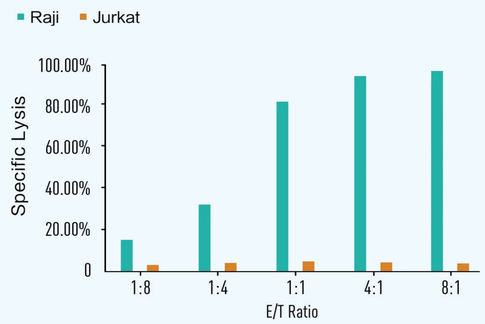


The cultivation performance of CD19 CAR-T cells in InnoVessel-500 bottles is equivalent to that in comparison products. After transfection for 8 days, the cell density exceeds 1.0E+07 cells/mL, with a viability exceeding 95%, and stable expression of CD19 CAR positivity.

CD19 CAR-T Cell Cytotoxicity/IFN-γ



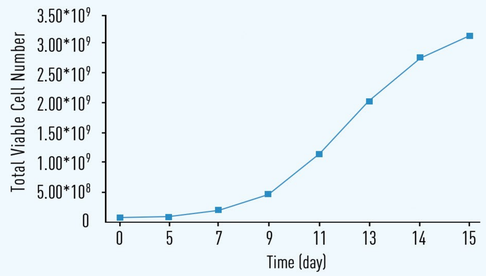
CD19 CAR-T Cell Cytotoxicity/Target Cell Lysis Rate

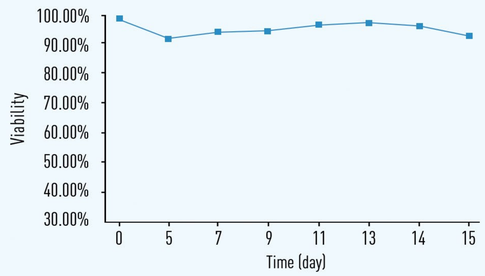


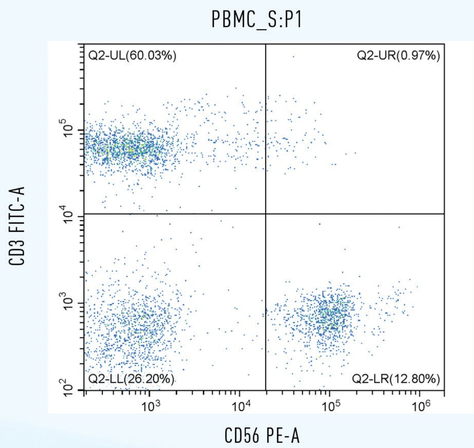
CD19 CAR-T cells cultured in InnoVessel-500 exhibit excellent killing effects against target cells.

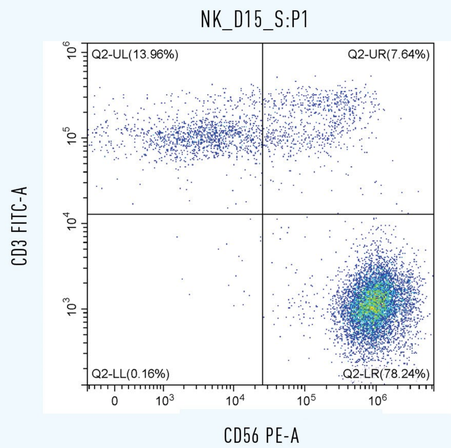
02 InnoVessel-500 culture bottles demonstrate outstanding performance in the cultivation and expansion of NK cells.

NK Cell









Starting with an initial PBMC count of 2E+07 cells, after activation induction, cultivation and expansion in InnoVessel-500 bottles allow the harvest of a total of 3E+09 cells from a single culture bottle, with a CD3-CD56+ ratio exceeding 75%.

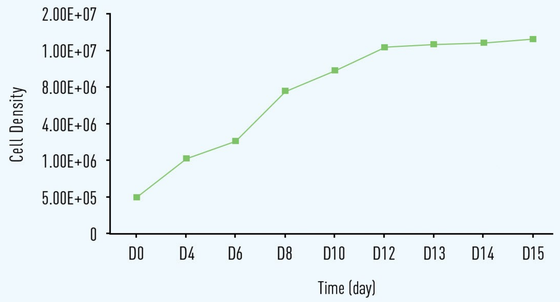
InnoVessel-1000 Flask

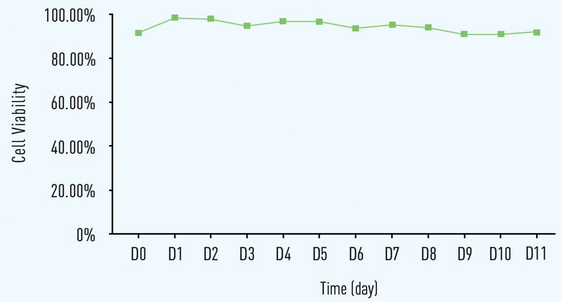
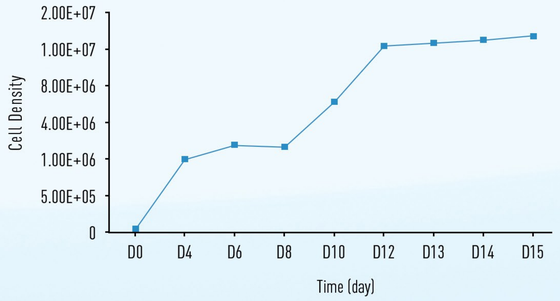
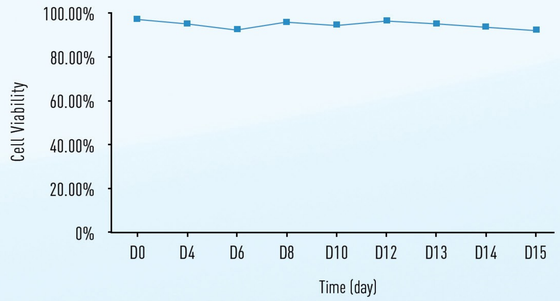
Recommendations for the culture include a volume range of 150-1,000mL and an inoculation density of ~5E+05 cells/mL.

The use of an open-mouth design allows for fluid exchange without centrifugation, preventing cell damage and conserving culture medium. During cell harvest, a simple procedure involves allowing the upper culture supernatant to settle before discarding, followed by centrifugation for cell collection, making the process more straightforward and reducing contamination risks.

To meet the demand for a one-time culture with a substantial cell quantity, the InnoVessel-1000 culture bottle has a maximum volume of up to 1.2L, linearly increasing the number of harvested cells. Building upon the original design with top and bottom ventilation, the bottle's height and bottom surface area have been increased to enhance overall ventilation efficiency, providing a more conducive environment for cell growth.

T Cell





CAR-T Cell