Partner for End-to-End CGT Solutions

Huachenbio -- Your Professional Choice

苏州华辰生物科技有限公司

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WeChat Official Subscription Account

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HUACHEN 华辰生物

Partner for End-to-End CGT Solutions

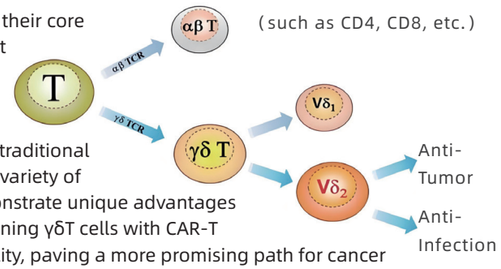
- High Proliferation, High Purity, and Strong Cytotoxicity
- First Generation: Zoledronic Acid Activation Method, Purity > 90%
- Second Generation: Antibody Activation Method, Purity > 98% (Meets Allogeneic Use Requirements);
  Pure Factor Formulation, No Chemical Reagents;
  PureSep-γδT Purification Reagent Enables High-Purity γδT Cell Enrichment
- Chemically Defined, Animal-Derived Component-Free, Contains Recombinant Albumin

novaT-36™

人γδT细胞高效激活扩增试剂盒

hyperClone®Human γδT Activation/Expansion Kit

Introduction to γδT Cells



The reason γδT cells have garnered widespread attention lies in their core characteristic of not requiring HLA antigen presentation.This trait enables them to excel in reducing the risk of graft-versus -host disease (GVHD), significantly enhancing the overall safety of therapies and opening up broader application prospects for the treatment of various diseases. Compared with traditional TCR-based T cell therapies, γδT cells can recognize and target a variety of tumor antigens in an MHC-independent manner, and they demonstrate unique advantages particularly in the treatment of solid tumors. Additionally, combining γδT cells with CAR-T technology can further strengthen their tumor-targeting capability, paving a more promising path for cancer immunotherapy.

Introduction to Huachen Bio hyperClone® Human γδT Cell Activation/Expansion Cocktail Kit

In the field of immune cell therapy, γδT cells are emerging as a key research direction for the next generation of immune cell therapies due to their characteristic of not requiring HLA antigen presentation.
As a leading enterprise providing solutions in the cell therapy field, HUACHEN Bio has developed two advanced clinical-grade methods for the efficient activation and expansion of γδT cells, which are based on the novaT-36 medium and pureSep-γδT purification reagent. These methods offer an innovative full-process solution for the clinical application in this field.

hyperClone Human γδT Activation/Expansion Cocktail Kit

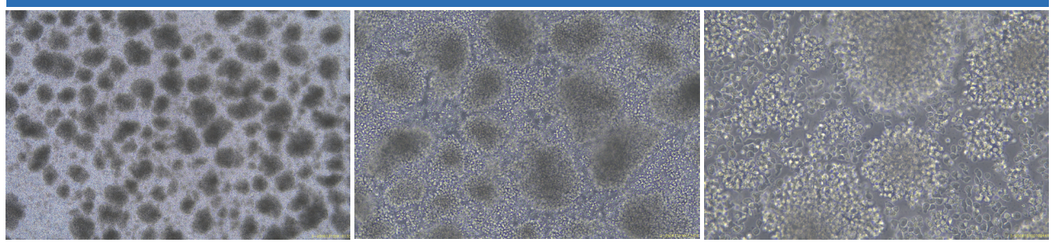
Using fresh/frozen PBMCs or CBMCs as the starting cells, purified γδT cells are easily obtained by efficiently and rapidly depleting αβT cells from whole blood using the pureSep-γδT Purification Reagent (αβT Depletion Reagent). Subsequently, the zoledronic acid activation method (1st Generation) and anti-CD3/CD28 activation method (2nd Generation) are applied to obtain γδT cells with high proliferation, high purity, and strong cytotoxicity. The two expansion methods provided by HUACHEN Bio each have their own focuses, offering flexible options for different research needs.

1st Generation γδT Cell Kit: Zoledronic Acid Activation Method

No pre-purification is required. Zoledronic acid is added during the activation process to expand Vδ2 cells and some Vδ1 cells, with the total number of cells achievable to expand 100-300 times. The cell quantity can be scaled up by increasing the culture volume. On day 14 (D14), the cell purity exceeds 90% with high cytotoxic activity. The 1st Generation Kit is suitable for both fresh and cryopreserved cells.

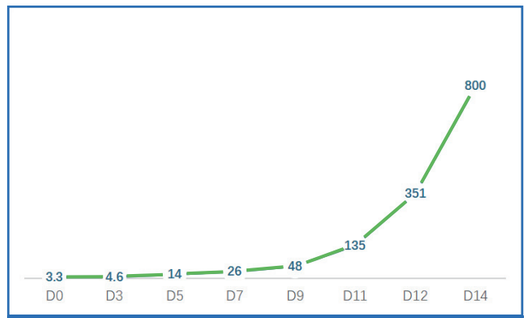
Photos of γδT Cell Culture

Photos of Cell Culture

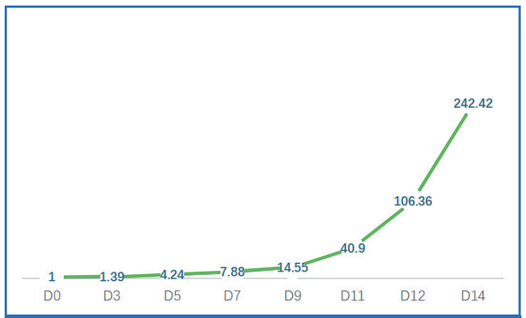


Cell Culture Data

Day	Counting /ml	Viability	Total Number of cells	Counting Volume	Medium Supple-mentation	Final Volume	Expasion Fold
D0	1.65E6	93.5%	3.3E7	20ml	-	20ml	1
D3	2.3E6	89.2%	4.6E7	20ml	30ml	50ml	1.39
D5	2.8E6	91.3%	14E7	50ml	50ml	100ml	4.24
D7	2.6E6	94.5%	26E7	100ml	50ml	150ml	7.88
D9	3.2E6	92.6%	48E7	150ml	300ml	450ml	14.55
D11	3E6	95.3%	135E7	450ml	900ml	1350ml	40.9
D12	2.6E6	94.7%	351E7	1350ml	650ml	2000ml	106.36
D14	4E6	92.8%	800E7	2000ml		2000ml	242.42

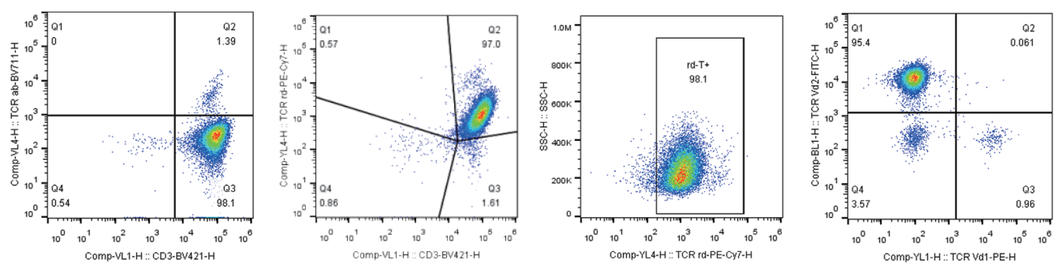


Total Cell Number（E7）



Expasion Fold

Flow Cytometry Assay



CD3+γδTCR+: 97%	Vδ2+: 95.4%	Vδ1+: 0.96%

2nd Generation γδT Cell Kit: Antibody Activation Protocol

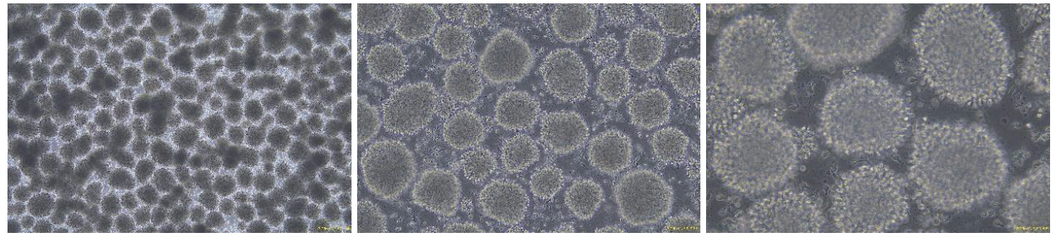
The pureSep-γδT purification reagent efficiently and rapidly removes αβT cells from whole blood. It achieves high-purity γδT cell enrichment based on the principle of density gradient negative selection, laying a foundation for ultra-high-purity expansion of γδT cells. In subsequent steps, an antibody activation protocol is adopted to expand both Vδ2 cells and a subset of Vδ1 cells while maintaining high purity and functional integrity. The entire process uses a pure cytokine formulation without introducing chemical reagent stimulation. After 7 days (d7) of culture, the purity exceeds 90%, and after 14 days (d14), the purity exceeds 98%, making it highly suitable for large-scale clinical applications of allogeneic γδT cells.The enrichment of γδT cells prior to culture ensures stable expansion efficiency across different donors, effectively addressing the common issue of donor individual variability in primary cell expansion and providing strong support for the reproducibility of research.

The second-generation kit, with the integration of the pureSep-γδT purification reagent, is suitable for use with fresh peripheral blood or umbilical cord blood.

The novaT-36 medium is a key support for these two expansion methods. Specially formulated, it is serum-free, xeno-free, and has a defined chemical composition, making it a preferred option for clinical-grade applications. This medium can support the growth of both Vδ2 and Vδ1 cell subsets simultaneously, ensuring high purity and functional integrity of the expanded cells.

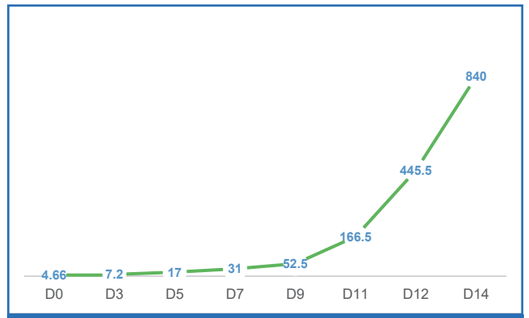
Photograph of γδT Cell Culture

Photograph of γδT Cell Culture

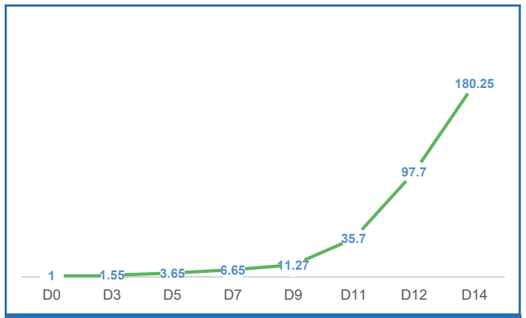


Cell Culture Data

Day	Counting /ml	Viability	Total Cell Number	Counting Volume	Medium supplementation	Final Volume	Expansion Fold
D0	2.33E6	92.3%	4.66E7	20ml	-	20ml	1
D3	3.6E6	90.3%	7.2E7	20ml	30ml	50ml	1.55
D5	3.4E6	91.9%	17E7	50ml	50ml	100ml	3.65
D7	3.1E6	93.5%	31E7	100ml	50ml	150ml	6.65
D9	3.5E6	93.6%	52.5E7	150ml	300ml	450ml	11.27
D11	3.7E6	93.8%	166.5E7	450ml	900ml	1350ml	35.7
D12	3.3E6	94.9%	445.5E7	1350ml	650ml	2000ml	97.7
D14	4.2E6	95.4%	840E7	2000ml		2000ml	180.25

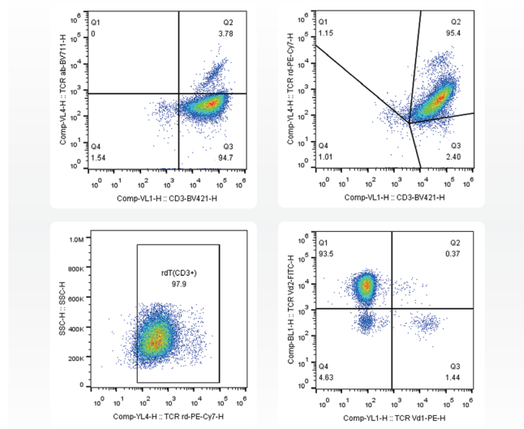


Counting Volume（E7）



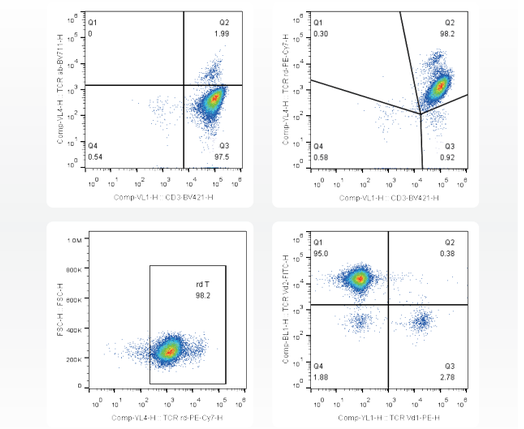
Expansion Fold

Day 7 Flow Cytometry Results



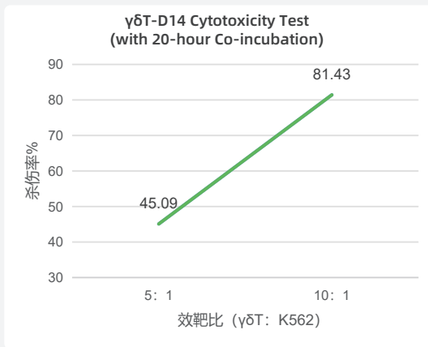
CD3+γδTCR+: 95.4% | Vδ2+: 93.5% | Vδ1+: 1.44%

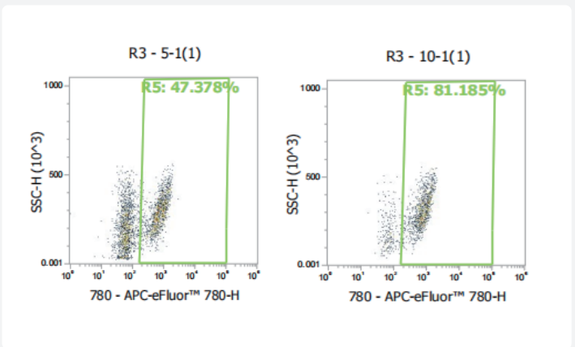
Day 14Flow Cytometry Results

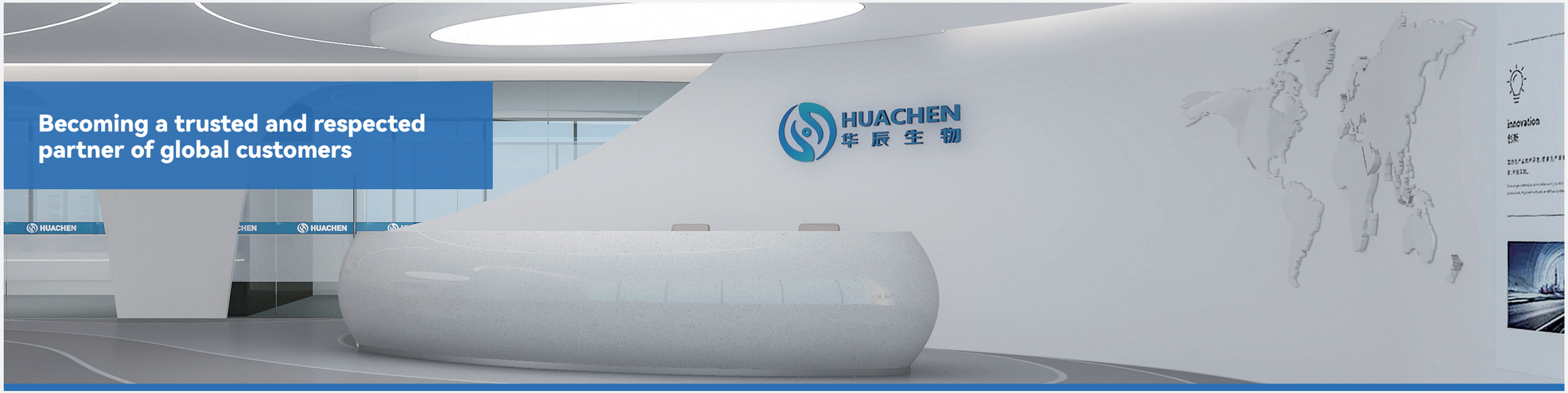


CD3+γδTCR+: 98.2% | Vδ2+: 95% | Vδ1+: 2.78%

γδT cells were cultured until Day 14 (D14), then co-incubated with K562 cells for 20 hours to conduct a tumor cytotoxicity assay.







Suzhou Huachen Biotechnology Co., Ltd.

It is an enterprise focusing on end-to-end solutions in the field of cell and gene therapy. It is committed to providing high-quality products and services for the biopharmaceutical industry, serving scientists worldwide engaged in research on stem cells, immunology, cancer, regenerative medicine, and cell therapy, and striving to become a trusted and respected partner of global customers.

Products cover

stem cell serum-free media, stem cell chemically defined media, NK cell high-efficiency activation and expansion kits, 3DStarPore microcarriers, T cell media, γδT cell kits, hematopoietic stem cell media, ES media, iPSC media, cryopreservation solutions, as well as cell culture and detection instruments, auxiliary products, and educational resources.

Huachen Biot is committed to becoming a leading supplier in the cell therapy field. Through continuous technological innovation and high-quality services, it promotes the development of the biopharmaceutical industry and contributes to the cause of human health.

VISION

Becoming a trusted and respected partner of global customers

MISSION

Assisting global life science laboratories
and pushing the boundaries of scientific research and discovery

COMPETITIVENESS

- High-quality Products
- Professional R&D team
- global supply chain
- certification and compliance
- continuous investment in R&D
- Innovation-driven