

# Global Natural Killer (NK) Cell Therapeutics Market Trends, Companies & Clinical Trials Insight 2023

<https://marketpublishers.com/r/GC59BDCBC333EN.html>

Date: February 2023

Pages: 360

Price: US\$ 3,000.00 (Single User License)

ID: GC59BDCBC333EN

## Abstracts

Please note: extra shipping charges are applied when purchasing Hard Copy License depending on the location.

Global Natural Killer (NK) Cell Therapeutics Market Trends, Companies & Clinical Trials Insight 2023 Report Highlights:

Global Natural Killer (NK) Cell Therapeutics Market Trends Insight

Partnerships & Funding for Natural Killer Cell Therapies : > 10 Recent Deals

Global Natural Killer Cell Therapies Clinical Trials Insight: > 200 Therapies

Global Natural Killer Cell Therapies Clinical Trials By Company, Indication & Phase

Proprietary Technologies By Company Insight: > 10 Technologies

FDA Fast Track & Orphan Designation insight

Detailed Outlook On More than 30 Companies

Cell therapy has emerged as an efficient way to replace or repair damaged tissues and cells by using transplanting healthy cells from donors - which can be the patients themselves. In the last two decades or so, the application of cell therapy has expanded to cover many indications including cancer, and the results have not been disappointing. T cell therapy was developed as the earliest cell-based therapy for treating cancer and

throughout the years, many improvements have taken place in this domain allowing the entry of more immune cells to fight cancer in a patient. NK cells are the newest kind of immune cells which are showing benefits in treating both solid and hematological cancers, and with further improvements, are expected to dominate the cell therapy market in the coming years

The idea of using NK cells to treat cancer generated from the fact that they have unparalleled cytotoxic activities against cells not regarded as 'self'. NK cells express the receptors for the MHC class 1 molecule on their surfaces and any cell not having the corresponding ligand gets destroyed by these immune cells. To carry out its cytotoxic activity, NK cells contain granzymes and perforins which cause the target cell to lyse. MHC class 1 molecules are known to not be essential for cell viability and growth as a result of which cancers downregulate or lose the MHC I expression, which triggers NK cells against them.

Many mechanisms, such as immune checkpoint suppression and other poorly understood causes, result in decreased NK cell numbers, inhibit their functions, and markedly reduced killing activity in cancer patients. In order to raise the number of NK cells in patients' bodies after cancer treatment or while they are receiving it, NK cell therapy has been proposed as a viable immune-boosting technique. This will improve the immune system's ability to fight cancer cells. Even more commendably, NK cells do not cause the immune system to react negatively to them, which is a factor that guarantees the uptake of a NK cell therapy.

For a NK cell therapy, the process of generation of NK cells is the same as that for T cell therapy. NK cells are harvested from a healthy donor, preferably young, and are expanded in growth cultures to reach numbers high enough to be infused in the patient. Over years of gaining experience with working on T cell based therapies, the improvements seen in the latter have penetrated into the NK cell therapy domain, which enriches their cancer targeting ability. The improvements in reference are the expression of CARs and TCRs on the NK cell surface, which are specific for a specific cancer antigen.

Due to the therapeutic potential of T cell-based therapies and the increasing unmet medical need of patients, they have achieved outstanding clinical and economic success in the market. Nevertheless, they also come with disadvantages like cytokine release syndrome (CRS), ineffective treatment for solid tumors, and high rates of tumor recurrence. Pharmaceutical corporations all over the world are thrilled that NK cell-based medicines have become a viable alternative to T-cell-based therapy. These

include prominent pharmaceutical companies like Sanofi, Nkarta, Biohaven, and Vaxcell and also cancer research institutes such as the Fred Hutchinson Cancer Center and the German Cancer Research Center.

The interest in cancer therapy, which was previously mostly driven by molecular target-based pharmacological therapies, has been revived by NK cell therapies. Recent years have seen a rise in research activity, and significant improvements have been made in the design and delivery of NK cell-based therapies, increasing their potential as cancer treatments. Moreover, combination therapies incorporating NK cell therapies are also being examined in clinical trials, which are even more advantageous for this therapeutic domain and will help it attract the interest of key international drug developers.

## Contents

### **1. INTRODUCTION TO NATURAL KILLER (NK) CELL THERAPY**

### **2. MECHANISM OF ACTION OF NK CELL THERAPY**

- 2.1 Cytotoxic Action of NK Cells
- 2.2 Working of NK Cell Therapy
- 2.3 NK Cell Therapies Approaches
  - 2.3.1 CAR NK Cell Therapies
  - 2.3.2 TCR NK Cell Therapies

### **3. TREATMENT STRATEGIES FOR NK CELL THERAPIES**

- 3.1 NK Cell Therapy As Monotherapy
- 3.2 NK Cell Therapy As Combinatorial Agent

### **4. APPLICATION OF NK CELL THERAPY BY INDICATION**

- 4.1 NK Cell Therapy For Cancer
- 4.2 COVID-19 & Other Viral Infections

### **5. NK CELL THERAPY CHARACTERISTICS ENHANCEMENT APPROACHES**

- 5.1 Use Of Nanotechnology
- 5.2 Modifications In CARs
- 5.3 Use Of CRISPR/Cas9 Gene Editing

### **6. GLOBAL NATURAL KILLER CELL THERAPIES CLINICAL TRIALS OVERVIEW**

- 6.1 By Company
- 6.2 By Country
- 6.3 By Indication
- 6.4 By Patient Segment
- 6.5 By Phase

### **7. GLOBAL NATURAL KILLER CELL THERAPIES CLINICAL TRIALS BY COMPANY, INDICATION & PHASE**

- 7.1 Research
- 7.2 Preclinical
- 7.3 Phase-I
- 7.4 Phase-I/II
- 7.5 Phase-II
- 7.6 Phase-II/III

## **8. NK CELL BASED THERAPY PROPRIETARY TECHNOLOGIES INSIGHT**

- 8.1 Overview
- 8.2 Proprietary Technologies By Company

## **9. PARTNERSHIPS & FUNDING FOR NK CELL THERAPIES**

- 9.1 Recent Partnerships, Collaborations & Licensing Agreements
- 9.2 Funding Deals By Companies

## **10. INVESTIGATIONAL NK CELL THERAPIES WITH FDA DESIGNATIONS**

- 10.1 FDA Fast Track Designation
- 10.2 FDA Orphan Drug Designation

## **11. NK CELL THERAPIES MARKET TRENDS & CLINICAL TRIALS OUTLOOK**

- 11.1 Current Market Trends, Developments & Clinical Trials Assessment
- 11.2 Future Commercialization Opportunity

## **12. COMPETITIVE LANDSCAPE**

- 12.1 Acepodia
- 12.2 Beijing JD Biotech
- 12.3 Cartherics
- 12.4 Catamaran Bio
- 12.5 Century Therapeutics
- 12.6 City of Hope National Medical Center
- 12.7 CRISPR Therapeutics
- 12.8 CytolImmune Therapeutics
- 12.9 Cytovia Therapeutics
- 12.10 Dragonfly Therapeutics

- 12.11 Editas Medicine
- 12.12 Fate Therapeutics
- 12.13 Gamida-Cell
- 12.14 GC Biopharma/GC Lab Cell
- 12.15 GICELL
- 12.16 Glycostem
- 12.17 HK inno.N
- 12.18 ImmunityBio
- 12.19 Karolinska Institute
- 12.20 Kiadis Pharma
- 12.21 Nkarta Therapeutics
- 12.22 NKGen Biotech
- 12.23 ONK Therapeutics
- 12.24 Phio Pharmaceuticals
- 12.25 Sanofi
- 12.26 Senti Biosciences
- 12.27 Shoreline Biosciences
- 12.28 Sian Wuhan Medical Technology
- 12.29 Smart Immune
- 12.30 Sorrento Therapeutics
- 12.31 Therabest Korea
- 12.32 University of California
- 12.33 University Of Minnesota
- 12.34 University of Texas M. D. Anderson Cancer Center
- 12.35 XNK Therapeutics
- 12.36 Zelluna Immunotherapy

## List Of Figures

### LIST OF FIGURES

Figure 1-1: NK Cells – Identification & Discovery Timeline

Figure 1-2: NK Cell Subsets - CD56low/dim v/s CD56bright

Figure 2-1: Cytotoxic Action Of NK Cells

Figure 2-2: CAR-NK Cells Preparation

Figure 2-3: Delivery Of CAR Gene Into NK Cell

Figure 2-4: NK Cells Sources For Therapy

Figure 2-5: Structure Of CAR/TCR-NK Cell

Figure 4-1: AB-101 Phase 1/2 Study – Initiation & Completion Years

Figure 4-2: SMT-NK Phase 2/3 Study – Initiation & Completion Years

Figure 4-3: CYNK-001 Phase 1 CYNK001AML01 Study – Initiation & Completion Years

Figure 4-4: CYNK-001 Phase 1 Study – Initiation & Completion Years

Figure 4-5: CYNK-101 Phase 1/2 Study – Initiation & Completion Years

Figure 4-6: FT538 Phase 1 Study – Initiation & Completion Years

Figure 4-7: CYNK-001 Phase 1/2 CYNKCOVID Study – Initiation & Completion Years

Figure 4-8: DVX201 Phase 1 Study – Initiation & Completion Years

Figure 4-9: FT538 Phase 1 Study – Initiation & Completion Years

Figure 5-1: Improvements In NK Cell Therapy Using Nanotechnology

Figure 5-2: Basic Structure Of CARs On NK Cell

Figure 5-3: Gene Editing Tools

Figure 6-1: Global – NK Cell Therapies Clinical Trials By Company, 2023 till 2028

Figure 6-2: Global – NK Cell Therapies Clinical Trials By Country, 2023 till 2028

Figure 6-3: Global – NK Cell Therapies Clinical Trials By Indication, 2023 till 2028

Figure 6-4: Global – NK Cell Therapies Clinical Trials By Patient Segment, 2023 till 2028

Figure 6-5: Global – NK Cell Therapies Clinical Trials By Phase, 2023 till 2028

Figure 8-1: Artiva Biotherapeutics - Proprietary CAR-NK Cell Platform

Figure 8-2: Artiva Biotherapeutics - Proprietary AlloNK™ NK Cell Therapy Scaling Platform

Figure 8-3: Catamaran Bio – Proprietary Tailwind® Platform

Figure 8-4: GAIA BioMedicine - Proprietary NK Cell Therapy Working Mechanism

Figure 8-5: GAIA BioMedicine – Proprietary Technologies' Salient Features

Figure 8-6: Gamida Cell – NK Cell Therapy Manufacturing Process

Figure 8-7: HebeCell - Proprietary Scalable NK Cell Technology

Figure 8-8: ImmunityBio – Proprietary haNK® Cell Structure

Figure 8-9: Nkarta - Proprietary CAR-NK Cell Structure

Figure 8-10: Nkarta - Proprietary NK Cell Therapy Platform

Figure 8-11: Senti Biosciences - Gene Circuit Technology Platform

Figure 8-12: Senti Biosciences - Gene Circuit Technology Platform Applicability

Figure 8-13: Wugen – Proprietary Memory NK Cell Platform

Figure 8-14: XNK Therapeutics – Autologous NK Cell Therapy Platform



## I would like to order

Product name: Global Natural Killer (NK) Cell Therapeutics Market Trends, Companies & Clinical Trials Insight 2023

Product link: <https://marketpublishers.com/r/GC59BDCBC333EN.html>

Price: US\$ 3,000.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/GC59BDCBC333EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970

