CAR T-cell Therapy Clinical Trial Pipeline Insights Featuring 250+ Companies | DelveInsight

DelveInsight's CAR T-cell Therapy pipeline report depicts a robust space with 250+ active players working to develop 500+ pipeline therapies.

LAS VEGAS, CALIFORNIA, UNITED STATES OF AMERICA, March 22, 2024 /EINPresswire.com/ -- DelveInsight's CAR T-cell Therapy Competitive Landscape report provides comprehensive global coverage of available, marketed, and pipeline bispecific antibodies in various stages of clinical development, major pharmaceutical companies working to advance the pipeline space, company assessment, comparative assessment, and future growth potential of the CAR T-cell Therapy competitive domain.

CAR T-cell Therapy Overview

CAR T-cell therapy, a groundbreaking form of immunotherapy, represents a promising frontier in the battle against certain types of cancer. This innovative treatment involves reprogramming a patient's own T cells—the soldiers of the immune system—to recognize and attack cancer cells with precision. The process begins by extracting a sample of the patient's T cells, which are then genetically modified to express chimeric antigen receptors (CARs) on their surface. These CARs are designed to bind to specific proteins found on cancer cells, effectively turning the patient's immune system into a targeted cancer-killing machine. Once the CAR T cells are infused back into the patient, they multiply and launch a relentless assault on the tumor cells, leading to often dramatic and durable responses, even in cases where traditional treatments have failed.

Despite its remarkable success in certain blood cancers like leukemia and lymphoma, CAR T-cell therapy does come with its challenges. The therapy can cause severe but usually reversible side effects, known as cytokine release syndrome (CRS) and neurologic toxicities, which require careful monitoring and management. Additionally, the cost of CAR T-cell therapy remains high, limiting its accessibility to many patients. Nevertheless, ongoing research efforts are focused on expanding the application of CAR T-cell therapy to solid tumors and improving its safety profile. As this cutting-edge treatment continues to evolve, it holds the potential to transform the landscape of cancer care, offering new hope to patients facing previously incurable diseases.

CAR T-cell Therapy Market Dynamics

The CAR T-cell therapy market continues to witness dynamic growth, propelled by advancements in biotechnology and the promising results demonstrated in treating various types of cancers. This innovative immunotherapy approach involves modifying a patient's T cells to target and destroy cancer cells, offering a personalized treatment option with the potential for long-lasting remission. The market dynamics are shaped by a surge in research and development activities, with pharmaceutical companies investing significantly in clinical trials to expand the therapeutic indications of CAR T-cell therapies. Additionally, collaborations between academia, biotech firms, and healthcare providers are fostering the commercialization of these therapies, paving the way for broader accessibility to patients worldwide.

As the CAR T-cell therapy market evolves, several factors are influencing its trajectory. Rising incidences of cancer globally, particularly hematologic malignancies, are driving the demand for novel and effective treatment options, positioning CAR T-cell therapies as a promising solution. Moreover, the growing trend towards precision medicine and the increasing adoption of cell-based therapies are fueling market expansion. Challenges such as high treatment costs, complex manufacturing processes, and managing adverse side effects remain key considerations. However, ongoing efforts to streamline production, enhance safety profiles, and secure regulatory approvals are contributing to the market's maturation. With a robust pipeline of next-generation CAR T-cell therapies in development, the market is poised for continued growth and innovation in the fight against cancer.

Marketed CAR T-cell Therapy: Company and Product Profile

Relmacabtagene autoleucel: JW Therapeutics

Relmacabtagene autoleucel injection, known as Relma-cel (sold as Carteyva®), is an autologous therapy using anti-CD19 CAR-T cells. This treatment was independently developed by JW Therapeutics, building upon Juno Therapeutics' CAR-T cell technology (a company within Bristol Myers Squibb). As JW Therapeutics' inaugural product, Relma-cel gained approval from the China National Medical Products Administration (NMPA) in September 2021. Its approval was for treating adults with relapsed or refractory large B-cell lymphoma after two or more previous lines of therapy. Notably, this marked Relma-cel as the first CAR-T product to be designated a Category 1 biologic in China. Furthermore, it remains the sole CAR-T therapy in China included in the National Significant New Drug Development Program. Relma-cel has received priority review and breakthrough therapy designations.

Find out more about CAR T-cell Therapy drugs @ CAR T-cell Therapy Treatment

Key Developments in the CAR T-cell Therapy Therapeutics Domain

In January 2023, CARsgen Therapeutics announced a collaboration with Huadong Medicine to commercialize zevorcabtagene autoleucel (zevor-cel), CT053, in mainland China. Under the collaboration, Huadong Medicine will have the exclusive right to commercialize CARsgen’s CT053

in mainland China. According to the deal, CARsgen will receive $29.7m (RMB200m) in upfront payment and is also eligible for up to $152.4m (RMB1,025m) in regulatory and commercial milestones.

In December 2022, Arcellx, Inc. announced a global strategic collaboration to co-develop and co-commercialize Arcellx's lead late-stage product candidate, CART-ddBCMA, for the treatment of patients with relapsed or refractory multiple myeloma. Currently, in Phase 2 clinical development, CART-ddBCMA is an investigational cell therapy product comprising autologous T cells that have been genetically modified to target multiple myeloma. CART-ddBCMA utilizes Arcellx's novel D-Domain binder. Kite and Arcellx will jointly advance the CART-ddBMCA asset.

In December 2022, CARsgen Therapeutics Holdings Limited announced that at the 2022 American Society of Hematology (the "ASH") Annual Meeting, the Company presented a poster with the results of the phase I/II LUMMICAR STUDY 1 clinical trial of zevorcabtagene autoleucel. Results for the 14 subjects treated in phase I of LUMMICAR STUDY 1 showed a well-tolerated safety profile, plus deep and durable responses with an objective response rate (ORR) of 100% and a complete response/stringent complete response (CR/sCR) rate of 78.6%.

CAR T-cell Therapy Pipeline Analysis: Drug Profile

Zevorcabtagene autoleucel: CARsgen

Zevor-cel (CT053) represents a fully human, self-derived BCMA CAR T-cell product aimed at treating relapsed or refractory multiple myeloma (R/R MM). CT053 utilizes a CAR design featuring a fully human BCMA-specific single-chain variable fragment, engineered for decreased immunogenicity and improved durability. CARsgen is currently engaged in a Phase I/II clinical study to assess the safety and effectiveness of zevor-cel in R/R multiple myeloma cases. Additionally, the company intends to initiate further clinical investigations to position zevor-cel as an earlier treatment option for multiple myeloma. CARsgen anticipates that this therapy will tackle the challenge of T-cell exhaustion by limiting the self-activation of CAR T-cells in the absence of tumor-specific targets. The company envisions zevor-cel as a potentially transformative approach in multiple myeloma treatment, aiming to establish it as a fundamental therapy for patients with this condition.

Descartes 011: Cartesian Therapeutics

Descartes-11 utilizes Cartesian's RNA Armory℠ platform to enable temporary expression of its CAR molecules, contrasting with the permanent expression found in traditional CAR T-cell treatments. This approach aims to minimize both immediate and long-term risks associated with standard CAR T-cell therapies. Production of Descartes-11 occurs internally at Cartesian's advanced cGMP manufacturing site in Gaithersburg, MD. In a Phase 1 trial involving patients with advanced myeloma, Descartes-11 displayed an absence of typical CAR T-cell side effects such as cytokine release syndrome (CRS) and neurotoxicity. To achieve the full therapeutic dose, tens of

billions of cells are mRNA-engineered with the CAR molecule for each infusion, eliminating the necessity for the preconditioning chemotherapy required by conventional CAR T-cell treatments. The drug is presently undergoing Phase II clinical trial evaluation for its efficacy in treating Multiple Myeloma.

The other emerging CAR T-cell therapies in the pipeline include

JCAR017: Juno Therapeutics
CT 103A: Innovent Biologics
MB-CART2019.1: Miltenyi Biomedicine
Kymriah: Novartis
KTE-X19: Gilead Sciences
P-BCMA-101: Poseida Therapeutics
Descartes-11: Cartesian Therapeutics
Orvacabtagene autoleucel: Juno Therapeutics
BPX-603: Bellicum Pharmaceuticals

Learn more about the emerging CAR T-cell Therapy pipeline drugs @ CAR T-cell Therapy Clinical Trials

CAR T-cell Therapy: Key Facts and Analysis

CAR T-cell Therapy Market Landscape

Over 250+ CAR T-cell Therapy companies including Alnylam Pharmaceuticals, JW Therapeutics, Gilead Sciences, Janssen Pharmaceuticals, Innovent Biologics, Sorrento Therapeutics, Cartesian Therapeutics, CASI Pharmaceuticals, Juventas Cell Therapy, Novartis, Poseida Therapeutics,Shanghai Unicar-Therapy Bio-medicine Technology, Sinobioway Cell Therapy Co., Ltd., Tessa Therapeutics, Wuhan Bio-Raid Biotechnology, Miltenyi Biomedicine, Bristol-Myers Squibb, Autolus Limited, Beijing Immunochina Medical Science and Technology, Carsgen Therapeutics, Cellular Biomedicine Group, Chongqing Precision Biotech, Eureka Therapeutics, Formula Pharmaceuticals, Guangzhou Bio-gene Technology, Hebei Senlang Biotechnology, Mustang Bio, MolMed, Aurora BioPharma, Atara Biotherapeutics, Autolus, Bellicum Pharmaceuticals, Kecellitics Biotech Company Ltd, Yake Biotechnology, Minerva Biotechnologies, Allogene Therapeutics, PersonGen BioTherapeutics (Suzhou), Precision BioSciences, Pregene (ShenZhen) Biotechnology Company, Shanghai GeneChem, Shanghai Longyao Biotechnology, Shenzhen BinDeBio, and others, are actively engaged in research and development.

More than 500+ CAR T-cell therapies such as Breyanzi, Kymriah, CT103A, CEA CAR-T, Descartes-11, CNCT19, CTL119, P-BCMA-101, CD19/CD20/CD22/CD30 CAR T-cell therapy, CD19-targeted CAR T-cells, EPCAM-targeted CAR-T cells, TT11, CD19+CD22 CAR-T cell sequential therapy, CART-19/22, MB-CART2019.1, JCAR017, AUTO4, AUTO3, IM19 CAR-T, CSG-CD19, CT053, Descartes-08, Orvacabtagene autoleucel, CAR-T CD30, PCAR-19B, BCMA CAR-T cells, CD123 CAR-T cells, CD19

CAR-T cells, ET140202, CIK-CAR.CD19, BG-T19, Autologous CD19-targeting CAR T cells (Senl-001), MB-102, Autologous CAR-T CD44v6 cell therapy, AU101, ATA2271, AU105, AUTO1, BPX-601, Anti-CD22 CAR, CAR-T cells targeting CD19 and CD22, huMNC2-CAR44 CAR T-cells, CD19-CART, ALLO-501A, AUTO1/22, ET 1402L1-CART, BPX-603, CAR-CD44v6, MB-106 (CD20 CAR), Anti-MUC1 CAR-T cells, PCAR-019, PBCAR0191, PBCAR20A, PBCAR269A, BCMA CAR T-cells, CAR19 CAR T cells, MG7-CART Cells, GPC3 – CART Cells, Anti-CD19 and Anti-CD20 CAR-T Cells, Humanized CD19 CAR-T cells, Dual Specificity CD19 and CD22 CAR-T Cell Immunotherapy, Mesothelin CAR-T cell therapy, and others are currently underway across different stages of development.

Anticipated acceptance of these drugs in the market is expected to drive substantial revenue growth.

CAR T-cell Therapy Market Potential

Rising incidences of cancer worldwide are driving the demand for innovative treatments like CAR T-cell therapy.

Ongoing research is exploring the application of CAR T-cell therapy in solid tumors, which could significantly broaden its market reach.

A robust pipeline of CAR T-cell therapies targeting various antigens and cancers indicates a wide array of potential treatments in development.

CAR T-cell Therapy Market Future Outlook

Growing adoption of personalized medicine approaches boosts the demand for CAR T-cell therapies tailored to individual patients.

Advancements in genetic engineering and biotechnology enhance the effectiveness and safety profile of CAR T-cell therapies.

Favorable regulatory environment and expedited approval pathways facilitate the commercialization of new CAR T-cell therapy products.

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Related Reports

CAR T-cell Therapy for Multiple Myeloma Market

CAR T-cell Therapy for Multiple Myeloma Market Insights, Epidemiology, and Market Forecast – 2032 report delivers an in-depth understanding of the disease, historical and forecasted epidemiology, as well as the market trends, market drivers, market barriers, and key CAR T-cell therapy for multiple myeloma companies, including Novartis, Yake Biotech, Celgene Corporation, among others.

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Shruti Thakur
DelveInsight Business Research LLP
+ 14699457679
www.delveinsight.com

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