



## \*\*\*\*Published March 2017\*\*\* MarketVIEW: CAR-T therapy overview (CAT: VAMV073)

Product Name	:	MarketVIEW: CAR-T therapy overview
Description	:	Overview of therapeutic cancer vaccines
Contents	:	Executive presentation + 1 Excel workbook
Therapeutic Area	:	Cancer immunotherapy
Publication date	:	March 2017
Catalogue No	÷	IOMV073

# Background

**CAR-T** or Chimeric Antigen Receptor T cells are a sub component of **Adoptive T Cell therapy (ACT)**, a promising new treatment intervention for cancer. In **ACT**, a patient's individual T cells are removed and manipulated so they have an increased capacity to fight cancer. The therapy is usually personalized (autologous) for a specific patient.

Chimeric antigen receptor T cells present hybrid receptors consisting of an antigen binding domain of an antibody (e.g. directed to CD19) fused to the T-cell receptor signalling domain. So far, the technology has undergone four generations of development, where second-generation approaches have shown remarkable responses in clinical studies<sup>1,2</sup>. Complete remission in up to 90% of patients have been reported for relapsed or refractory B-cell Acute Lymphoblastic Leukaemia (B-ALL).<sup>1</sup> Since 2015/2016 commercial interest has heightened in the development of CAR-T therapies with companies such as **Novartis**, **Pfizer** (Cellectis), Medimmune, Juno Therapeutics, and Kite Pharma involved in clinical studies, mainly against hematological cancers.

This **MarketVIEW** product consists of a detailed Executive presentation (~91 slides) and MS-Excel work book summarizing latest developments in CAR-T therapies with a full review of the field to date. A searchable database of nearly **200** CAR trials has been compiled with analysis by start date, current phase, indication and sponsor type (industry and/or academic). For the hematological cancers, detailed case studies are provided looking at clinical trial parameters and data presented to date. Future perspectives, key risks, and challenges along with summary and conclusions are provided. This analysis is ideal for those wishing to gain an up-to-date understanding of the CAR-T landscape.

Chimeric Antigen Receptor T Cells for Sustained Remissions in Leukemia. Maude e al. 2014. N Engl J Med. 371(16): 1507–1517.

<sup>2</sup> CD19-CAR Trials. 2014. Ramos et al. Cancer J. 20(2): 112–118

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# Methodology

**iOnco Analytics** has closely monitored all significant source material pertaining to CAR-T therapies as approaches to cancer immunotherapy. Source materials used are literature articles, government websites, medical bodies and associations, conference proceedings etc.

### PRODUCT CONTENTS: Published March 2017 (CAT No: IOMV073)

\*\*\*\*This product is composed of one Excel workbook<sup>3</sup> and an executive presentation<sup>4</sup>

Contents Executive summary Chimeric Antigen Receptors (CAR) - Background Cancer Immunotherapy Adoptive T cell therapy - T cells Categories of adoptive T cell therapies Adoptive T cell therapy - TIL approach Adoptive T cell therapy - Genetically modified T cell approach Adoptive T cell therapy - Genetically modified T cell approach - Engineered T cell receptor Adoptive T cell therapy - Genetically modified T cell approach - Chimeric Antigen Receptor T cells (CAR-T) Adoptive T cell therapy - Antigen selection for a CAR-T approach CAR-T cell therapy - Potential issues and challenges Chimeric Antigen Receptor T cells (CAR-T) - Review of Key Successful Clinical Trials CAR-T cell therapy - successful clinical trials for CD19-CAR-T targeting acute lymphoblastic leukaemia CAR-T cell therapy - successful clinical trials for CD19-CAR-T targeting lymphoma Chimeric Antigen Receptors (CAR) - Current R&D pipeline CAR-T Therapy - pipeline analysis methodology Chimeric Antigen Receptor (CAR) Trials: total number of clinical trials Chimeric Antigen Receptor (CAR) Trials: activity 2008-present Chimeric Antigen Receptor (CAR) Trials: activity (industry) Chimeric Antigen Receptor (CAR) Trials: activity (non industry) Chimeric Antigen Receptor (CAR) Trials: phases and sponsor type Chimeric Antigen Receptor (CAR) Trials: target indications (all phases) Chimeric Antigen Receptor (CAR) Trials: phase I-IV, by indication Chimeric Antigen Receptor (CAR) Trials: haematological indications, phases and sponsor type Chimeric Antigen Receptor (CAR) Trials: multiple indications - phases and sponsor type Chimeric Antigen Receptor (CAR) Trials: neurological indications - phases and sponsor type Chimeric Antigen Receptors (CAR) - Advanced Clinical Trials for Blood Cancer Targets: Leukaemia/Lymphoma/Myeloma Chimeric Antigen Receptor (CAR) Trials - haematological cancer targets Blood cancer targets for CAR-T therapy: Leukaemia (background) Leukaemia: survival rates and treatment types Blood cancer targets for CAR-T therapy: Lymphoma (background) and survival rates Lymphoma: current treatments Blood cancer targets for CAR-T therapy: Myeloma (background), survival rates and current treatments Advanced Clinical Trials for Leukaemia/Lymphoma/Myeloma Leukaemia/Lymphoma/Myeloma - Industry sponsored CAR-T studies Chimeric Antigen Receptors (CAR) - In depth review of key industry sponsored programmes

<sup>3</sup> Contents available on request

<sup>2</sup> Presentation titles may apply to more than one slide

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Continued.....

Bluebird bio, Celgene Corporation: BB2121 Cellular Biomedicine Group Ltd: C-CAR011 Celyad: NKR2 Juno Therapeutics Inc, Celgene Corporation: JCAR017 Juno Therapeutics Inc, Celgene Corporation: other CD19+ trials Juno Therapeutics Inc: CAR-T trials for additional targets Juno Therapeutics, Inc., MedImmune LLC: JCAR014 Takara Bio Inc Kite Pharma: KTE-C19 Novartis: CTL019 Novartis: CD19 CAR-T Long Term Follow Up Servier, Cellectis, Pfizer: UCART19 Cellectis: additional UCARTS CAR-T - summary and conclusions Bibliography About iOnco Analytics Disclaimer

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