

CAR-T Cell Therapy Market Analysis

1.1. CAR-T Cell Therapy

The global CAR-T Cell therapy market was estimated at US\$ 167.9 million in 2018 and is expected to witness a CAGR of 46.1% until 2028¹. The market is still very small since only 2 treatments for specific indications were approved so far and both are not mass produced yet.

The CAR-T market is booming with over 300 CAR-T clinical trials registered at clinicaltrials.gov. two drug approvals and two major buyouts, one of which is Kite Pharma (deal estimated at \$12B) and the second is Juno Therapeutics (deal estimated at \$9B), both occurring in a period of six months. Additional transactions in the market²:

- Johnson & Johnson agreed to pay \$350 million to partner with Chinese firm Nanjing Legend Biotech after the company released promising CAR-T data at the ASCO annual meeting.
- Gilead acquiring Cell Design Labs, a biotech company developing novel CAR-T and T-cell receptor therapies in a deal valued at up to \$567 million
- Bluebird bio and Celgene Corporation Enter into Agreement to Co-Develop and Co-Promote Anti-BCMA CAR T Cell Therapy bb2121 in the United States
- Pfizer's CAR-T collaboration with Cellectis that was accompanied by \$80 million upfront payment and up to \$185 million per product with royalties
- Hitachi Chemical bought PCT cell therapy, a cell therapy CDMO, in May 2017 for \$75 million
- FUJIFILM invested \$4 million for a 10% equity stake in January 2017 in Cynata Therapeutics which responsible for the world's first clinical trial involving an allogeneic iPSC-derived therapeutic product (CYP-001).
- Johnson & Johnson bet \$12.5 million on Capricor Therapeutics cell therapy program for cardiovascular applications (CAP-1002) through its subsidiary, Janssen Pharmaceuticals, in January 2014.

46.1% CAGR
CAR-T Cell Therapy
between 2018-2028

¹ <https://www.coherentmarketinsights.com/market-insight/car-t-cell-therapy-market-102>

² <https://www.bioinformant.com/pharma-investing-in-cell-therapy-companies/>

1.2. Cancer Biological Therapy Market Size

The market for global cancer biological therapies was estimated at \$56 billion in 2016 and is expected to reach at \$82 billion by 2023 at a CAGR of 4.7%³. North America accounted for the largest market share in the global cancer biological therapy market, USD 19.5 billion in 2016 and expected to reach by USD 29.5 billion by 2023 at a CAGR of 5.10%.

\$82 Billion
Global Cancer Biological
Therapy Market

The market driving factors for global cancer biological therapy market are increasing cancer survival rates, growing demand for advanced therapies such as biological therapy and growth of cancer healthcare facilities in emerging countries. However, the less number of side effects associated with biological therapy as compared to conventional treatment methods such as chemotherapy and radiotherapy is the critical growth factor.

1.3. Cancer Patients

There are 15 million new cases of cancer each year⁴. Worldwide there will be 23.6 million new cases of cancer each year by 2030. The table below depicts the most common types of cancer⁵.

³ <https://www.medgadget.com/2018/06/cancer-biological-therapy-market-2018-global-sales-size-share-competitive-analysis-upcoming-opportunities-and-forecast-to-2023.html>

⁴ <http://www.cancerresearchuk.org/health-professional/cancer-statistics/worldwide-cancer>

⁵ <https://www.wcrf.org/int/cancer-facts-figures/worldwide-data>

Rank	Cancer	New cases diagnosed in 2012 (1,000s)	Per cent of all cancers (excl. non-melanoma skin cancer)
1	Lung	1,825	13.0
2	Breast	1,677	11.9
3	Colorectum	1,361	9.7
4	Prostate	1,112	7.9
5	Stomach	952	6.8
6	Liver	782	5.6
7	Cervix uteri	528	3.7
8	Oesophagus	456	3.2
9	Bladder	430	3.1
10	Non-Hodgkin lymphoma	386	2.7
11	Leukaemia	352	2.5

Current approved CAR-T cell treatments apply to liquid tumors (lymphoma and Leukemia) only, which represents ~5% of all cancer types. Following approval for treating solid tumors, RefuaPepCAR will be able to address most if not all types of cancer.