



FRONT RUNNER IN CAR-T CELL THERAPY FOR CANCER PATIENTS

Investor Presentation, December 2021

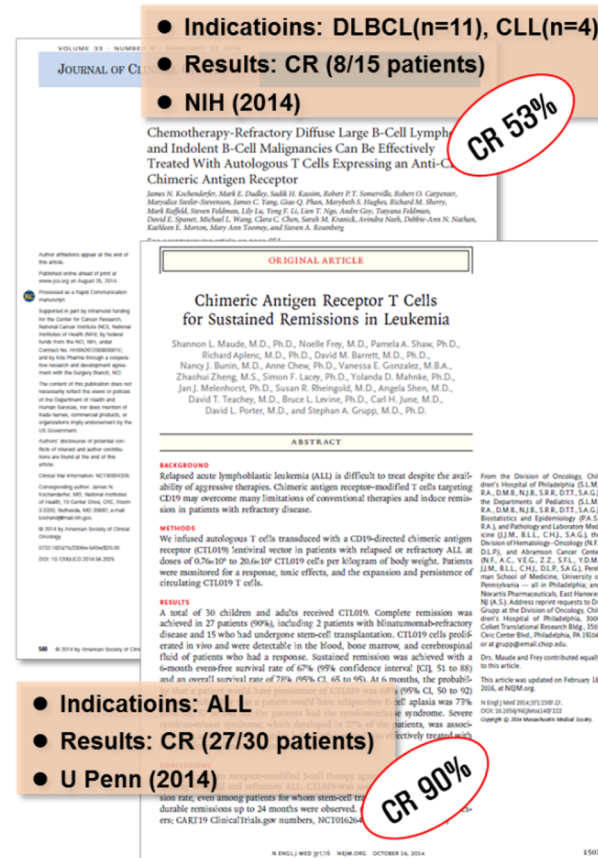
A 3D scientific illustration of CAR-T cell technology. In the center, a large purple spherical cell is being targeted by two red, textured spherical cells. The red cells are connected to the purple cell by blue, fibrous structures. Surrounding these are numerous smaller, glowing blue and purple spheres, representing various cellular components or signaling molecules. The background is a dark blue gradient with other blurred cells.

CAR-T TECHNOLOGY

 **Biocure Technology**
CSE: CURE | OTCQB: BICTF

WHAT IS CAR-T CELL THERAPY?

- T cells that have receptors for specific binding to the antigens expressed on cancer cells.
- Developed and approved for the first time as a treatment method for acute leukemia in 2017 (KYMRIAH by Novartis).
- After being approved as a treatment for acute leukemia, indications are being expanded to other blood cancers.
- Most CAR-T cell therapies currently approved or under development are second-generation constructs that recognize the CD19 antigen.
- **High remission rate for blood cancer.** (CR, Complete remission).
- **Expensive treatment cost**, about CAD\$540,000 per treatment.



Indications: DLBCL(n=11), CLL(n=4)

Results: CR (8/15 patients)

NIH (2014)

CR 53%

Indications: ALL

Results: CR (27/30 patients)

U Penn (2014)

CR 90%

CANCER BREAKTHROUGH by CNN, 2017

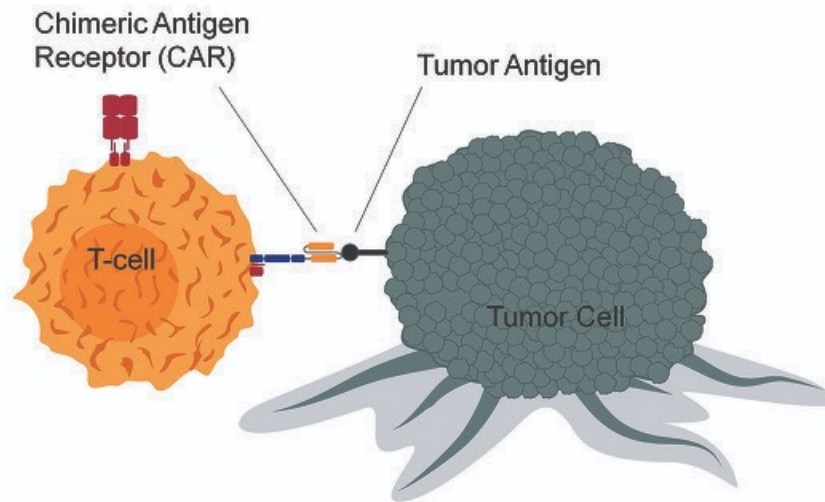
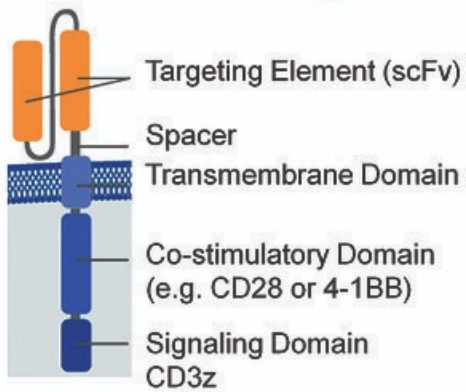
CAR-T therapy is a therapeutic agent that is challenging not only hematologic cancer but also incurable areas.



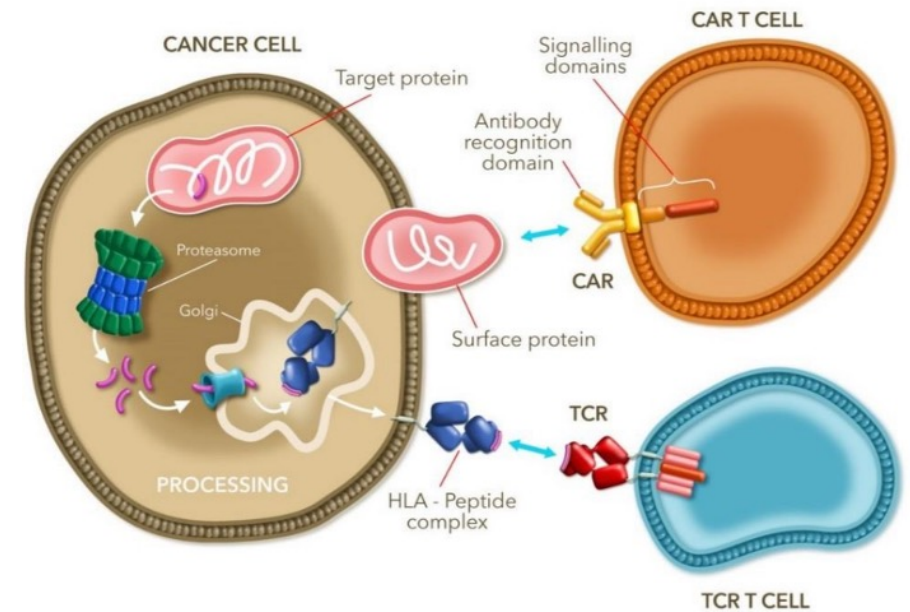
High CR for relapse and refractory patients with ALL who couldn't treat by existing drug.

STRUCTURE AND PRINCIPLE OF CAR-T CELL

CAR: Modular Design



(Source: [Genetic Engineering & Biotechnology News](#))



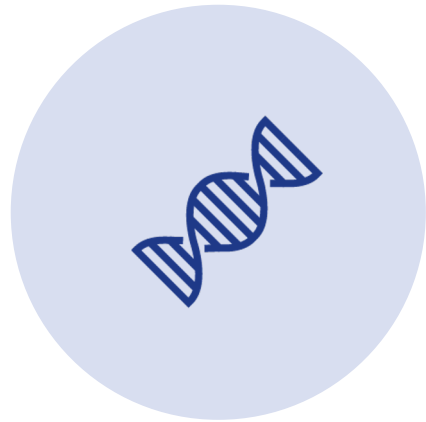
(Source: [Adaptimmune IR Materials](#))

CAR-T CELL THERAPY MECHANISM

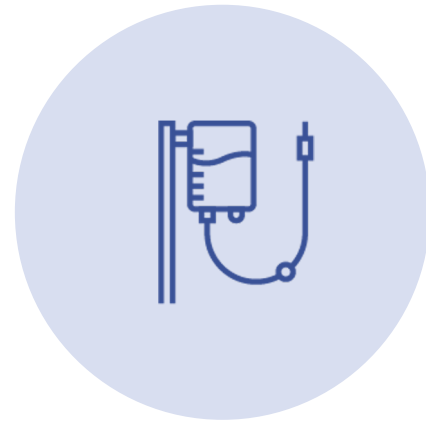
Uses a patient's own immune system to fight certain types of cancer



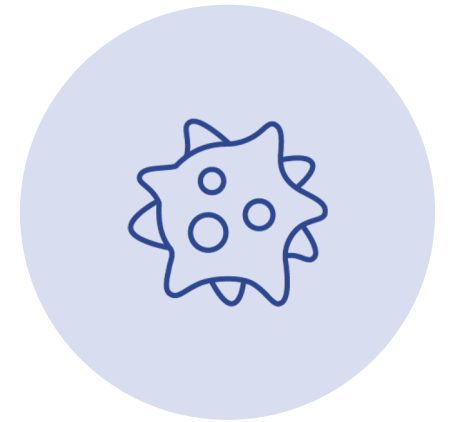
Manufactured using T cells extracted from patient's blood.



Transduction of CAR (Chimeric Antigen Receptor) into T cells to manufacture CAR-T cells and cell culture.




Re-injection of CAR-T cells into the patient.







CAR-T cells recognize the CD19 antigen on the surface of cancer cells and induce cytotoxicity activation of T cells to kill cancer cells.

BCP401: CD19 CAR-T

 **Biocure Technology**
CSE: CURE | OTCQB: BICTF

FDA APPROVED CD19 CAR-T CELL THERAPY

- As of 2021, 4 types of CAR-T cells have been commercialized.
- ✔ **All use Intravenous injection using autologous cells.**
- ✔ **The cost of one treatment Kymriah is about CAD\$540,000,** which is an expensive high-tech biopharmaceutical.
- Except for the recently approved ABECMA, all cells use the CD19 antigen as an indication for hematologic cancer.
- After approval, indications are being expanded.

Product	Target	Indication	Manufacturer
 KYMRIAH [®] (tisagenlecleucel) Suspension for IV infusion	CD19	ALL/DBCL	Novartis / UPENN
 YESCARTA [™] (axicabtagene ciloleucel) Suspension for IV infusion	CD19	ALL/DBCL	Gilead / KITE
 Breyanzi	CD19	DBCL	BMS / Juno
 Abecma [™] (idecabtagene vicleucel) Suspension for IV infusion	BCMA	Multiple myeloma	BMS / Blue Bird

CLINICAL PROGRESS TREND FOR UPCOMING CAR-T CELL THERAPY

- **The CD19 antigen is the most powerful antigen**, and many clinical studies use the CD19 antigen.
- In the early stages of development, the biggest problem with CAR-T cell therapy was the side effects such as CRS.
- For this, various antigens, new processes, safety switch off, Engineered (allogeneic) T cell therapy, etc. were tried.
- Hematologic > multiple myeloma > Clinical trial for solid tumor is in progress.

Therapy	Target	Manufacturer	Stage	Indication
Kymriah® (tisagenlecleucel)	CD19	Novartis	FDA approved	ALL
Yescarta® (axicabtagene ciloleucel)	CD19	Gilead / KITE	FDA approved	Non-Hodgkin lymphoma
JCAR017 (lisocabtagene marealeucel)	CD19	BMS / Juno	Submission	Leukemia, lymphoma, NHL
BB2121 (idecabtagene cilucel)	BCMA	Celgene	Phase II	Multiple myeloma
AUTO-1	CD19	Autolus	Phase I/II	Leukemia, lymphoma
JCAR104	CD19	Juno	Phase I	NHL
UCART19	CD19	Collectis / Servier / Allogene	Phase I	Leukemia, lymphoma

BCP401: FIRST CAR-T CELL THERAPY BY BIOCURE PHARM

Nonclinical Toxicity / Distribution

- Single to one toxicity
- Repeat permeability
- Immunotoxicity
- Carcinogenicity
- Reproductive toxicity
- Genetic toxicity
- Distribution test

Nonclinical Efficacy

- Physical chemistry and biological properties
 - Viability
 - Expansion fold
 - Phenotype
 - CAR expression
 - Gene copy number
- In vitro efficacy
 - Cytokine release
 - Cytotoxicity
- In vivo efficacy
 - Tumor regression
 - Survival rate

Manufacturing in GMP / Specification and Assay

- Lenti virus
 - Genetic verification for vector
 - Construction of cell bank
 - Establishment of manufacturing process
 - Establishment of specification and assay
- CAR-T cell manufacturing
 - Establishment of manufacturing process
 - Stability test
 - Establishment of specification and assay

IND Filing

- Application
- Plan to clinical trial
- GMP documentation
- Self criteria and test method
- Document of stability and efficacy
 - Development plan
 - Introduction
 - CMC assay for clinical sample
 - Document of nonclinical results
 - Document for clinical trial applicant

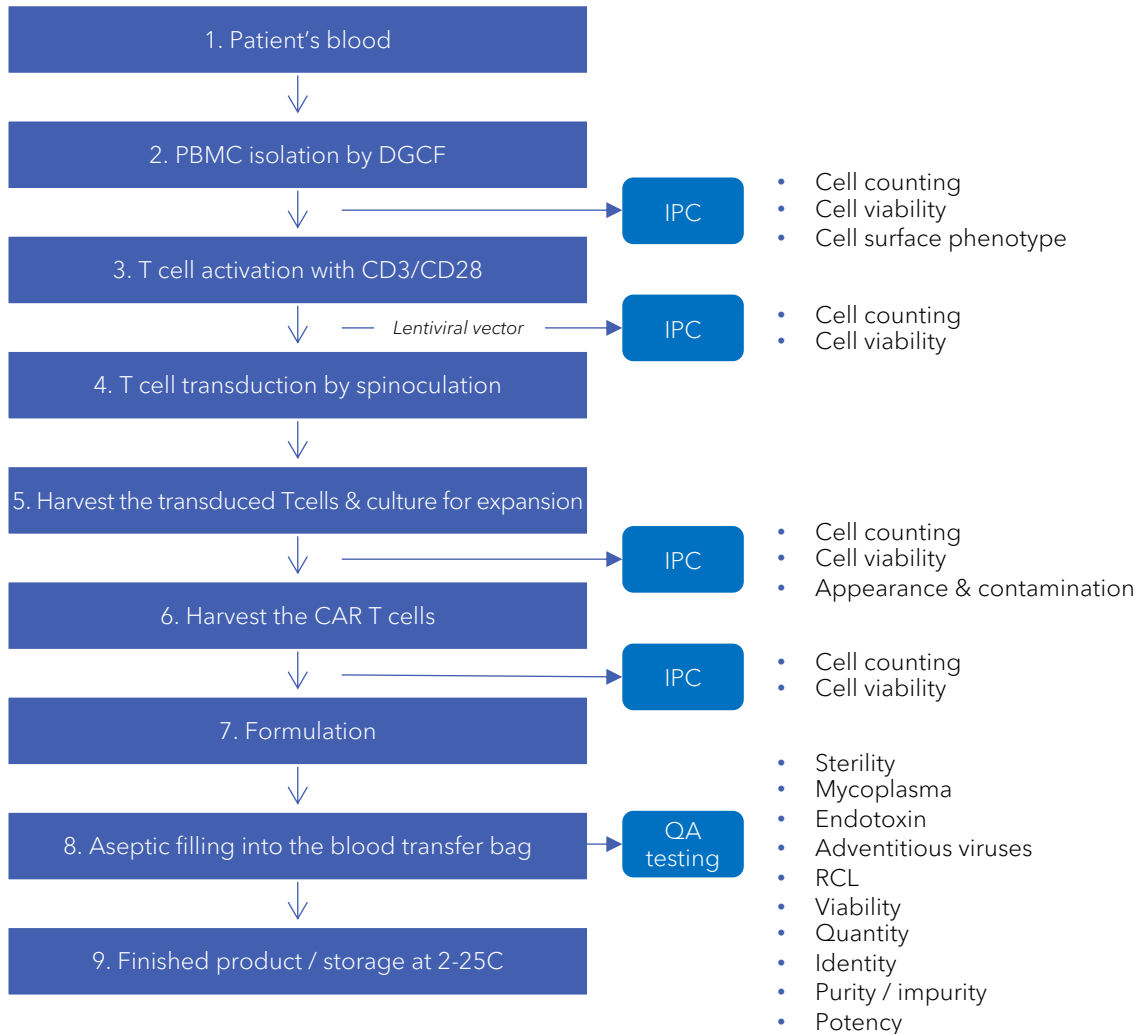
Documents to apply for clinical trial

Nonclinical toxicity and distribution completed
Establishment of the specification and assay completed
Manufacturing in GMP is in process
CMC(Chemistry, Manufacturing and Control) completed

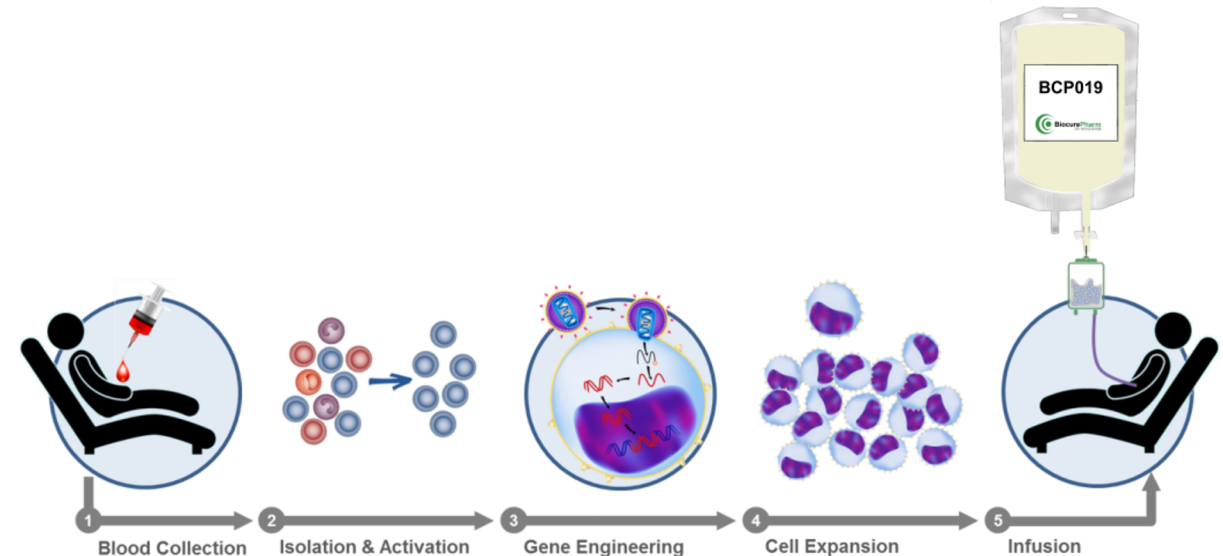
Choose the clinical center
Submit plan for trial

Application for IND Status

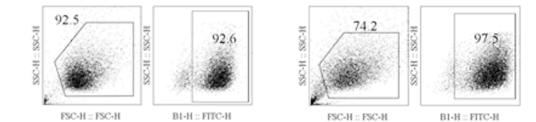
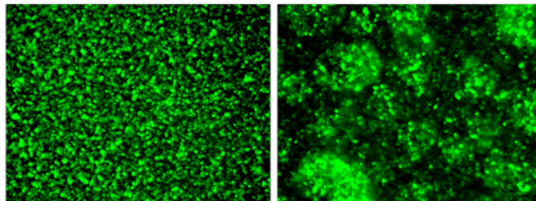
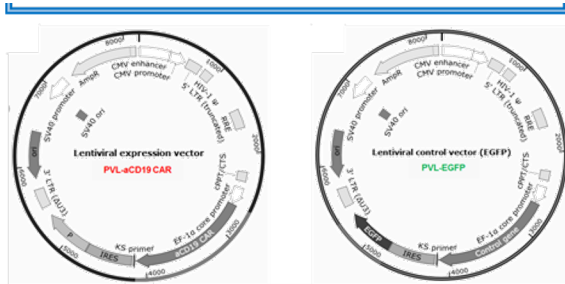
BCP401: MANUFACTURING PROCESS FOR BIOCURE PHARM DRUG PRODUCT



Re-injection into body to attack and kill a cancerous cells after making CAR-T cell, using the T cell extracted from patient's blood

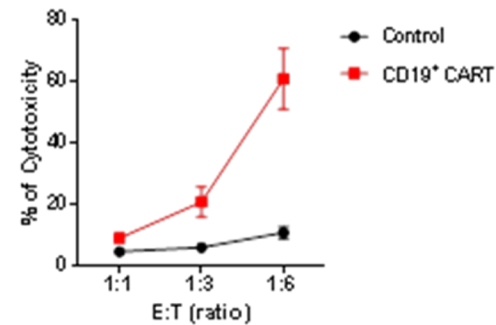
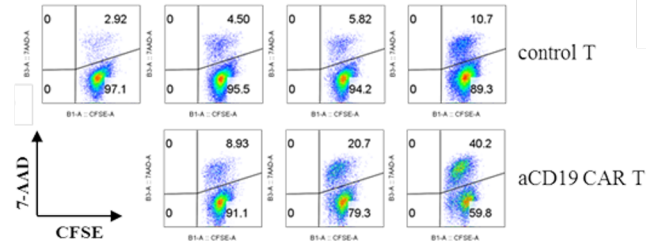
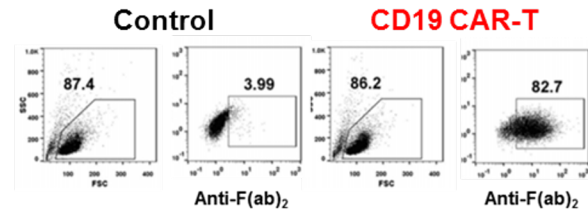


Construction of Lentiviral vector system

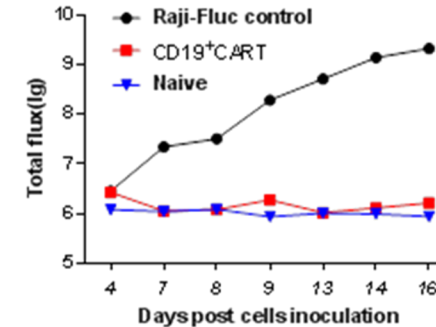
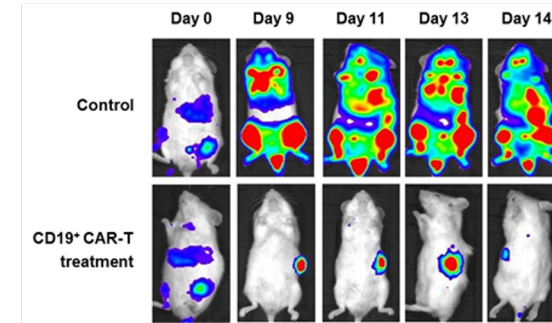


<Jurkat cells transduced with EGFP control> <T cells transduced with EGFP control>

Genetic transduction into T cell



Efficacy test (Preclinical)

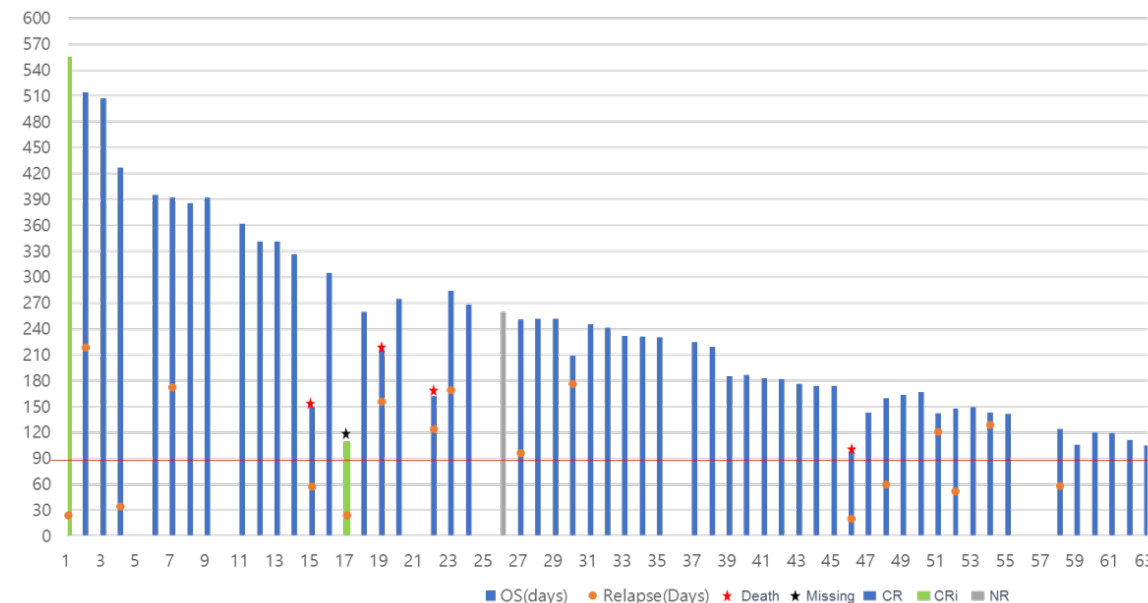


☑ Confirmation of BCP019 CAR-T therapy for leukemia on animal model test

BCP 401: RESULT FROM RESEARCH PURPOSE IIT CLINICAL TRIAL

- **Performed at People’s Hospital, Beijing: 63 Subjects with relapse/refractory ALL (1~25 age)**
- **Primary Endpoint for the Efficacy Analysis**
 - ORR evaluation within 3 mths after treatment. ORR confirmed through peripheral blood, bone marrow, cerebrospinal fluid analysis, and physical examination.
 - 7 of 63 are not allowed to be evaluated the efficacy
- ORR (overall response rate) was 55/56 (98.21%) as a result of the evaluated 56 subjects: CR (Complete Remission)_53 (94.64%), CRi (Complete Remission with incomplete hematological response)_2 (3.57%), NR_1 (1.79%). Initial evaluation of CR or CRi was assessed from 28 days.
- **Secondary Endpoint for the Efficacy Analysis**
 - The percentage of CR and CRi in MRD negative patients.
- **Adverse Events**
 - Bridge treatment (Stem Cell Transplant, SCT): 35 (62.5%) of 56 subjects were carried out by HSCT and 21 (37.5%) did not undergo HSCT (due to cytokine/chemokine status).

Investigator Clinical trial for CAR-T in China



4 patients (#23, #32, #35, #48) was manufactured by the PBMC derived from their family(sister, brother, and father)

Conclusion: To treat r/r B cell ALL with CD19 positive, CAR-T program has good response with a single dose.

BCP401: COMPARISON OF R/R B-ALL EFFICACIES OF CD19-TARGETED CAR-T IN VARIOUS TRIALS

Institution	# of Pts reported	Median age (range)	Disease-related outcomes
Children's Hospital of Philadelphia	30 (25 children, 5 adults)	Pediatric: ALL 11 (5-22) Adult: ALL 57 (36-60)	<ul style="list-style-type: none"> CR: 90% (MRD-negative in 88% of those who achieved CR) 6-month EFS: 67% / 6-month OS: 78%
National Cancer Institute	20	Pediatric: ALL 15 (5-27)	<ul style="list-style-type: none"> CR: 70% (MRD-negative in 60% of those who achieved CR) OS: 52% at 7.8 month / EFS: 79% at 4.8 month 10 of 12 in MRD-negative CR underwent AlloHSCT
National Cancer Institute	5	Adult: ALL	<ul style="list-style-type: none"> CR: 80% (4/5, all MRD-negative)
Memorial Sloan Kettering Cancer Institute	51	Adult: ALL (22-74)	<ul style="list-style-type: none"> CR: 82% (MRD-negative in 85% of those who achieved CR) 16 of 41 in CR underwent AlloHSCT Median OS: 9 months (in patients with morphologic disease at CAR-T cell infusion), not reached (in patients with minimal disease at CAR-T cell infusion)
Fred Hutchinson Cancer Research Center	30	Adult: ALL 40 (20-73)	<ul style="list-style-type: none"> MRD-negative CR: 10/12 among patients receiving Cy monotherapy; 16/17 among patients receiving Flu/Cy
University of Pennsylvania	27	Adult: ALL 44 (21-72)	<ul style="list-style-type: none"> CR: 15/27 (across all cohorts)
Beijing People's Hospital	63	Pediatric: ALL (1-25)	<ul style="list-style-type: none"> ORR 55/56 (98.21%): CR (94.64%), CRi (3.57%), NR (1.57%) 7 of 63 are not allowed to be evaluated the efficacy(ND) 35 of 56 in ORR underwent HSCT, 21 did not undergo HSCT

- The CD19 technology used in BCP401 showed promising results with **94.6% of patients in complete remission**
- However, the patent pathway for BCP401 was uncertain and **BiocurePharm has taken the know-how accumulated to date to focus on its CLL CAR-T program - BCP402.**

Source : Current clinical applications of CAR modified T cell, *Cytotherapy*. 2016 November; 18(11):1393-1409

OS (Overall Survival), EFS (Event Free Survival), MRD (Minimal residual disease), ORR (Overall Response Rate), ND(Not determine)

BCP402: ROR1 CAR-T










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CLL (CHRONIC LYMPHOCYTIC LEUKEMIA)

- Most common in adults and accounts for approximately 40% of all leukemia.
- The median age of diagnosis is 70 years, and twice as many men develop CLL compared to women.
- While no definitive cause of CLL has been established, targeted therapy regimens have proven to be efficacious treatments.
- Incidence of CLL patients in 2020 of major developed countries (Total 60,624).
- **Biocure Pharm is focused on CLL CAR-T through its program BCP402.**

Incident cases of Chronic CLL in 2020

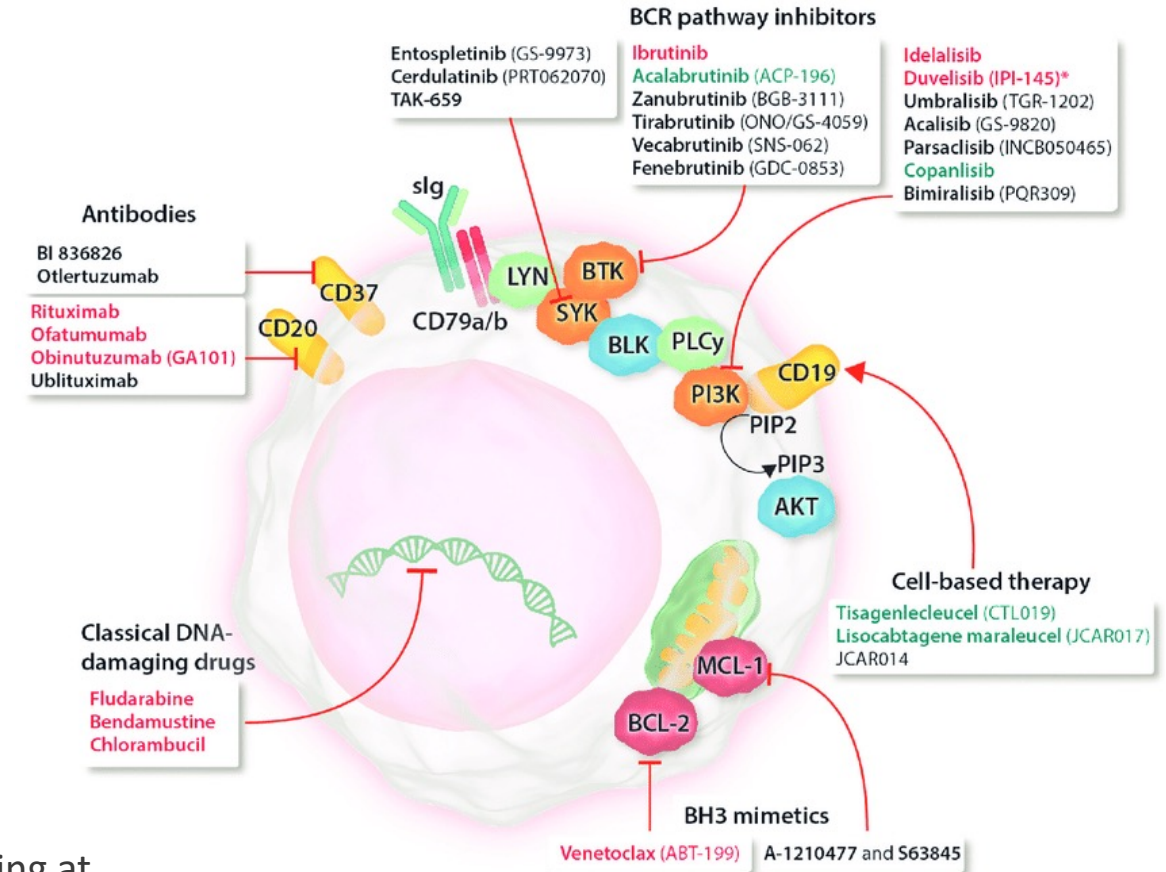


									
	US	Canada	UK	France	Spain	Germany	Italy	China	Jap
CLL cases	20,690	3,111	4,811	4,706	2,030	6,235	2,932	15,167	942
AGR 2017-27	2.76%	2.62%	1.65%	0.36%	2.14%	1.25%	1.33%	0.29%	2.29%

TOP-SELLING DRUGS OF TREATMENT FOR CLL

Brand Name (generic name)	Company	Approval	Target	Global Sales (2019)
Imbruvica (ibrutinib)	AbbVie and Johnson & Johnson	2013	BTK	\$7.24B
Rituxan (rituximab)	Biogen and Roche/ Genentech	1997	CD20 Monoclonal Antibody	\$6.62B
Venclexta (venetoclax)	AbbVie	2016	Bcl2 inhibitor	\$792M
Gazyva (obinutuzumab)	Roche/ Genentech	2013	CD20 Monoclonal Antibody	\$600M
Treanda (bendamustine)	Astellas Pharma	2008	DNA synthesis inhibitor	\$571M
Calquence (acalabrutinib)	AstraZeneca	2017	BTK	\$164M

*BTK (Bruton's tyrosine kinase); Bcl2 (B cell lymphoma antigen-2)

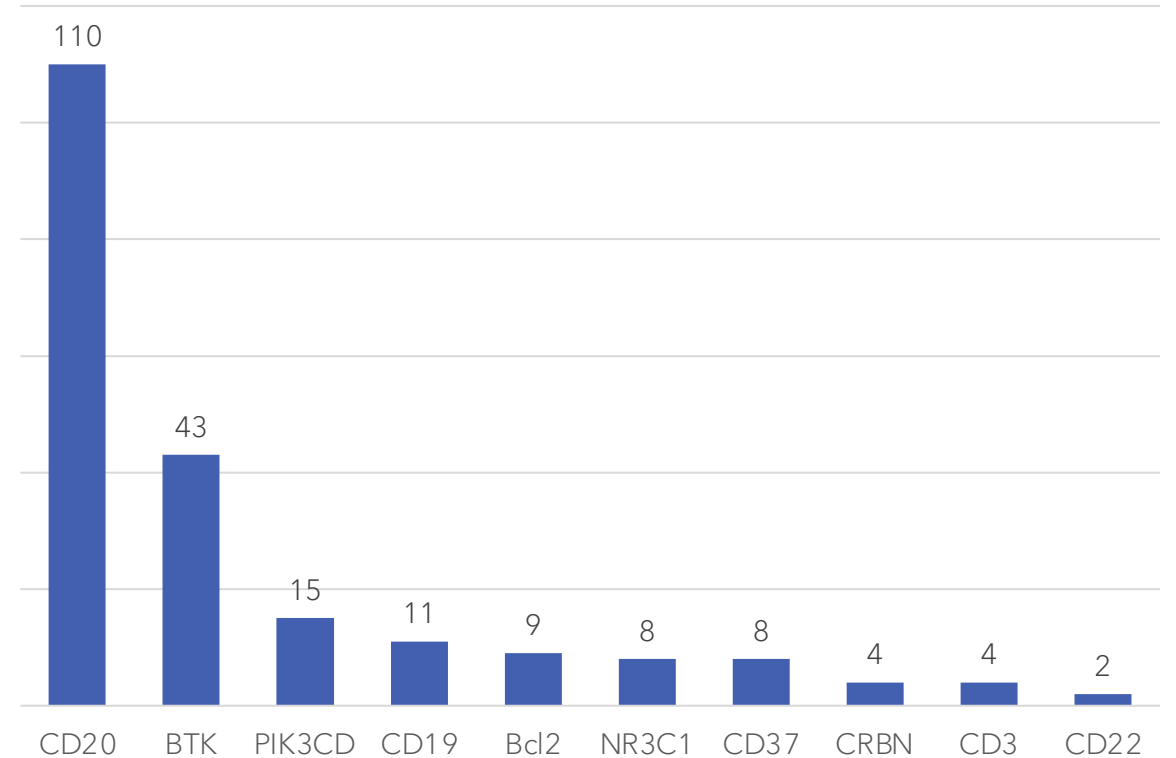


The global market for CLL is expected to reach \$12 billion by 2027, growing at CAGR 12.7% from 2021-27. (Source: [healthcareanalyst.com](https://www.healthcareanalyst.com))

TARGET OPTIONS OF TREATMENT FOR CLL UNDER DEVELOPMENT

- After CD20s, other promising targets under evaluation include BTK, PIK3CD, and Bcl2.
- CD37, CRBN and CD22 are targets being evaluated less in CLL drug development.

**Top Targets for Drug Development Against CLL
(Number of drugs)**



Source: GlobalData, Pharma Intelligence Center. Accessed April 2020.

BCP402 AS TREATMENT FOR CHRONIC LEUKEMIA (CLL)

- ROR1 is a CLL-specific antigen, and its expression rate is very low in normal cells.
- It has high specificity and safety.
- The development of BCP402 can increase the response rate and reduce side effects.
- The use of ROR1 antigen can be expanded to solid cancers.

UPCOMING CAR-T PROJECTS

 **Biocure Technology**
CSE: CURE | OTCQB: BICTF

- Biocure demonstrated with the BCP401 (CD19 CAR-T) project the ability to design, create and develop effective and powerful CAR-T therapy.
- We are developing CAR-T for the therapy of CLL (BCP402) and solid tumors (BCP403).
- We are currently designing CAR-T of the next generation (already with BCP402, 403):
 - a) **Bi-specific CAR-T**, i.e. binding two instead of only one target molecule: increased specificity and efficacy.
 - b) **Combination of CAR-T therapy** with additional means to increase efficacy: e.g. increased function under certain ECM (Extracellular Matrix) conditions; combination with other therapy forms, e.g. RNAi and checkpoint therapy.
 - c) others.

A close-up photograph of a medical drip chamber and IV tubing. The drip chamber is clear plastic with a green cap and a blue filter. It is connected to clear plastic tubing. In the background, a blurred person is visible, suggesting a hospital setting. A black banner is overlaid across the middle of the image, containing the text 'BIOCURE' and the Biocure Technology logo.

BIOCURE



WHY INVEST?

Accomplished Board

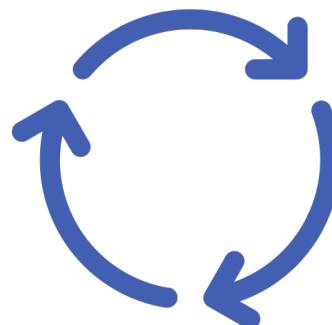
Biocure's has an extremely solid board of directors, advisory board and industry experts to enable it to execute on its growth strategy

Low valuation

At sub C\$20m market cap, huge upside potential exists for shareholders upon rerating of its shares

Established Track Record

Biocure boasts a proven track record of industry recognized research, development and intellectual property



Strong Partners and Talent

Biocure aligns itself with top-tier industry partners which enables it to attract top tier, world class talent

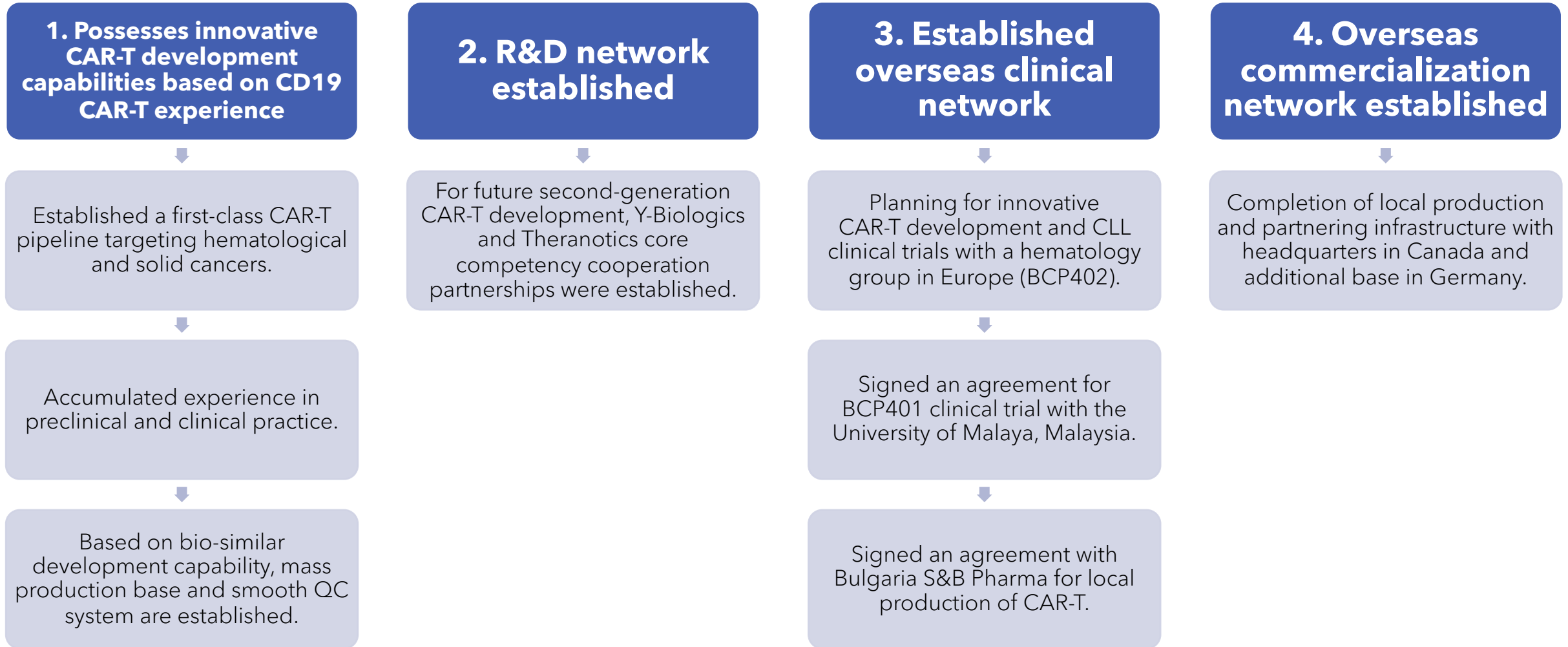
Large Addressable Market

The market for Car-T Cancer therapies is massive and growing strongly year on year - Large Blue Sky potential exists across the Cancer therapy space

Opportunistic Pipeline

Biocure has an extremely robust pipeline and numerous near-term drivers exist for the stock

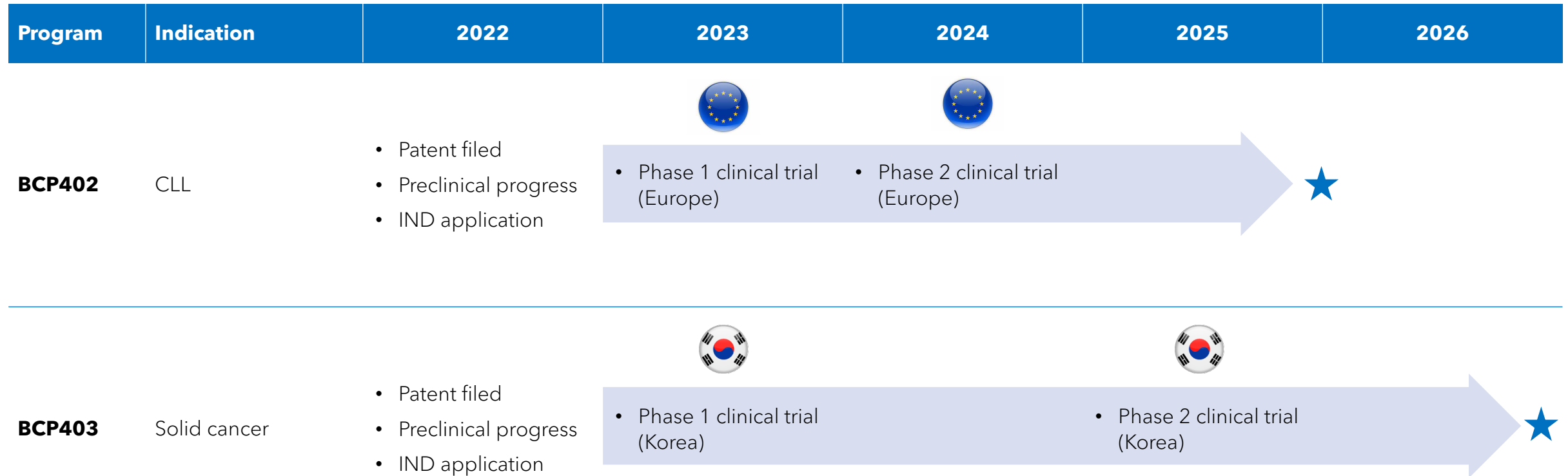
CORE COMPETENCIES



BUSINESS STRATEGY

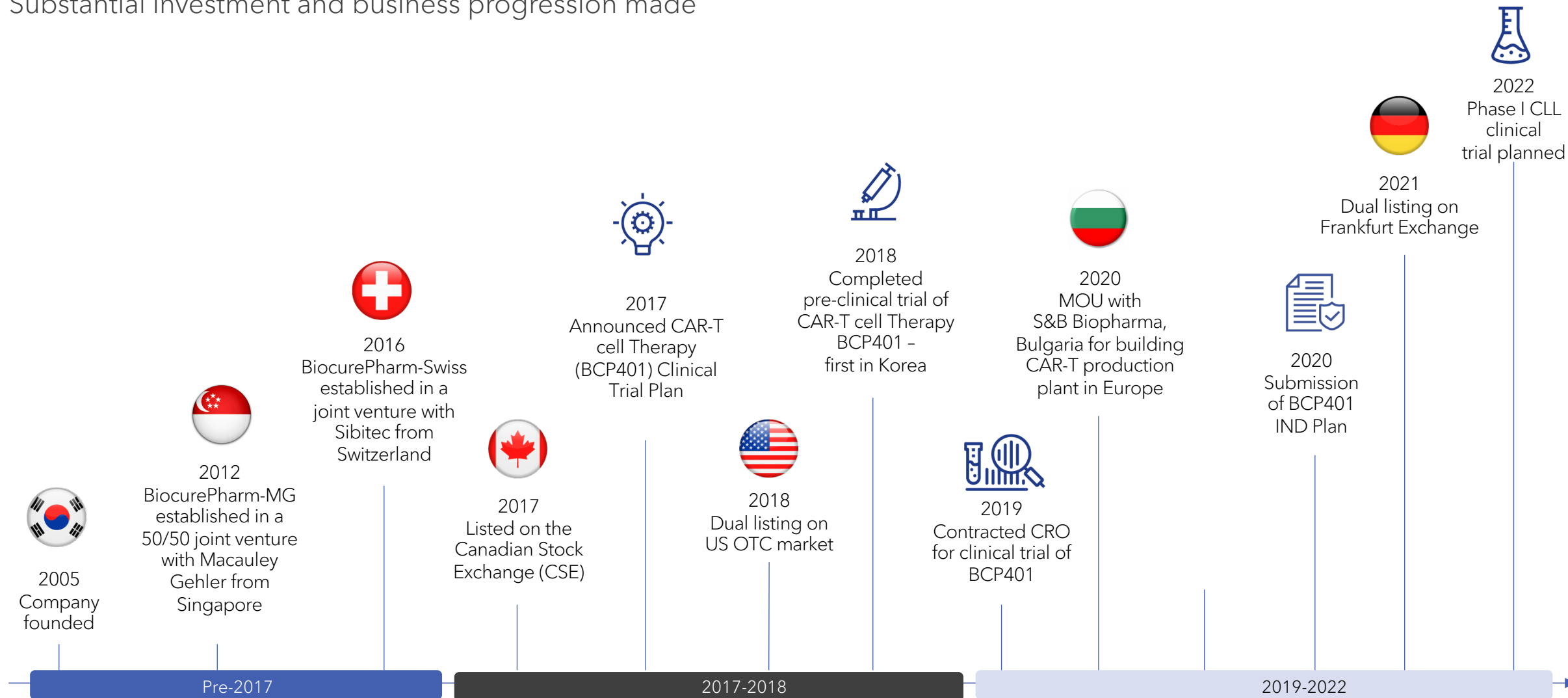
Productization strategy		Innovative CAR-T series development and patent application in the shortest time: chronic leukemia, solid tumors.
		Preparing for clinical development of BCP402 (ROR1 CAR-T) for the treatment of chronic leukemia (CLL) with a clinical expert team in Europe.
		Based on the case experience of CD19 CAR-T after preclinical progress of new solid cancer treatment CAR-T, clinical entry in the shortest time envisioned.
Commercialization strategy		Production and marketing in North America is being promoted from the Vancouver, Canada HQ.
		Product licensing, and technical cooperation with European partners from our offices in Frankfurt, Germany.
		Promoting clinical trials and production localization with Malaysia University of Malaya.
		Exploring EXIT plans through active cooperation with e.g. major pharmaceutical companies.

PLANS FOR PRODUCT DEVELOPMENT AND COMMERCIALIZATION



CORPORATE HISTORY TO DATE

Substantial investment and business progression made



12 MONTH FOCUS & OUTLOOK

The Company continues to build financial value within Cancer Treatment through two ways;

- Development of its own pipeline products with potential for the Company to secure a number of patents covering revolutionary Car-T bi-specific therapies in the near term.
- Building value through partnering with strategic players and licensees (non-dilutive funding).



The Company is currently focused on two kinds of innovative CAR-T pipelines covering;

- Chronic Lymphocytic Leukemia ("CLL") - Patent application expected to be lodged by the end of Q1, 2022.
- Lung and Ovarian cancer - preclinical trials expected to begin in Q2, 2022.

- Strong interest received from Technology-based Industry experts and Academic institutes to develop multiple new therapies.
- Company is in advanced collaboration discussions with a number of Strategic Industry players in Europe and Korea regarding development of a new CAR-T form using nanobody and new immune regulation factors.
- Company is in cooperation with a number of academic institutes focused on further development of its CAR-T therapies.

The Company is in discussions with a number of groups regarding planned trials in the medium term (12 months) including;

- A clinical trial planned in Germany with a team of CLL specialists.
- A clinical trial in Korea targeting lung cancer including multi-national clinical trials in Australia and Singapore.

- The Company has received strong interest out of Europe and Korea from a number of groups regarding potential strategic partnership and investment to leverage the enormous potential value of these therapies.
- The company is currently evaluating these proposals and will further update the market as these discussions progress.

HISTORIC VALUE ESTIMATION AND POTENTIAL

Company	Listed	IPO at Non-Clinical Stage (mUSD)	Current Market Cap (mUSD)	Current Stage
Autolus Therapeutics	NASDAQ	150	520	Ph 1
Adaptimmune Therapeutics	NASDAQ	191	950	Ph2
Cabaletta Bio	NASDAQ	75	270	Ph1
Kite Pharma	N/A	128	Acquired by Gilead for 12 bUSD	Approval
Neximmune	NASDAQ	126.5	325	Ph1/2

COMPARISON TO EARLY CLINICAL STAGE COMPANIES

Company	Listed	Current SP (USD)	Market Cap (mUSD)	Stage (of Lead Program)*
CARsgen Therapeutics	HKG	5.75	3.260	Ph2
Fate Therapeutics	NASDAQ	54.52	5.333	Ph1
Poseida Therapeutics	NASDAQ	7.29	455	Ph1

*stage of the development process/most advanced pipeline project

Biocure Technology	CSE	0.19	19	Ph1
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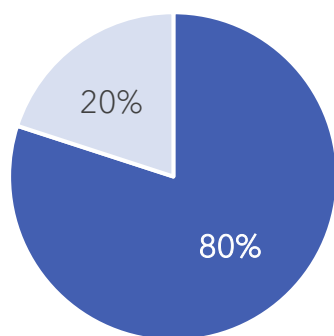
CAPITAL STRUCTURE

Share Structure

*as of Nov 5th 2021

Outstanding Shares	106,621,158
Share Price	\$0.15
Warrants Outstanding	9,051,272
Options Outstanding	7,570,000
Market Capitalization	\$15,993,174

Outstanding Shares



■ Investors ■ Insiders

Options Outstanding

Expiry Date	Exercise Price	Amount of Options
Apr. 2022	\$0.38	300,000
Feb. 2024	\$0.30	6,020,000
Jul. 2024	\$0.30	1,250,000
Total		7,570,000

Warrants Outstanding

Expiry Date	Exercise Price	Amount of Warrants
Oct. 2022	\$0.21	1,786,725
Jul. 2023	\$0.16	7,240,547
Total		9,027,272

BOARD OF DIRECTORS AND MANAGEMENT

Experienced leadership team

Dr. Sang Mok Lee CEO & Founder, Director	Dr. Bjorn Cochlovius President	Mr. Konstantin Lichtenwald CFO, Director	Mr Collin (Sang Goo) Kim Director	Mr. Berkan Unal Director	Dr. Danny Joh Director
<ul style="list-style-type: none"> • President and CEO of Biocure Technology since the inception in 2005 • Holds a PhD in microbiology from Busan National University in Korea and is currently an adjunct professor in microbiology at Chungnam National University • A committee member for the hi-tech medical complex city in Daejeon, Korea and a committee member of KOFST (the Korean Federation of Science and Technology Societies) 	<ul style="list-style-type: none"> • Bjoern Cochlovius, Ph.D., is a Molecular Biologist and Associate Professor for Immunology at Heidelberg University, Heidelberg, Germany. • Bjoern has held various leadership positions in biotech (e.g. Affitech, Oslo) and big pharma (amongst others at Roche, Basel; Abbvie, Singapore) in R&D, BD&L and strategic positions. • Currently holds two chairmanships (Sapreme, Netherlands, and Karolinska Development, Sweden). • Currently CEO at Medrxa Therapeutics, Heidelberg. 	<ul style="list-style-type: none"> • Over 15 years' finance and accounting experience, including corporate compliance, accounting and financial management and IPO, RTO services • Extensive knowledge and know-how for companies in North America and German speaking parts of Europe • A Chartered Professional Accountant (CPA, CGA) and Chartered Certified Accountant (ACCA), where he is a member of Chartered Professional Accountants of B.C. and Canada as well as a member of the Association of Chartered Certified Accountants of United Kingdom 	<ul style="list-style-type: none"> • 30 plus years of experience in the petrochemical, coal and mineral industries and involved in various mineral projects bringing together Canadian and major Korean State-Owned Firms. • Vice President for Columbia Capital since 2008 and a director of ArcPacific Resources Corp., a public Canadian junior exploration company since 2015 • Worked for Hanwha Corp., one of Korea's business conglomerates for 16 years including 5 years in Jakarta, Indonesia as a Chief Representative of Hanwha's Jakarta office. • Bachelor's degree in Business Administration from Korea University in 1990. • Communicates between Korean management and Canadian management cross the border with his vast knowledge and work experience 	<ul style="list-style-type: none"> • Over 10 years' experience in the biopharmaceutical industry in Germany and Switzerland and connections to global leaders in the biopharmaceutical sector • Currently, acts as business development director for biologics, gene and cell therapy of GenScript Biotech, a global leading biotech company, and has been involved in the processes that provide end-to-end solutions from discovery to commercialization • Studied bioprocess engineering and medical biotechnology at Berlin Technical University of Applied Sciences, Hamburg University of Technology and Imperial College London 	<ul style="list-style-type: none"> • 20 years' biopharma product development and cross-functional program management experiences with Chiron, Genentech, Biomarin, Sangamo and other biotech companies • Experience spans from early to late stage product development in various platforms, including biologics, small molecules, and gene therapy across many therapeutic areas, including cancer and rare genetic disorders • PhD in Biochemistry at Texas A&M university and an MBA at Rice University



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