HLB Life Science

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Investor Relation 2024

Mar 2024

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Company Overview

Vision & Mission

Vision

No.1 Cancer-specialized company through achieving 5 global L/O deals by 2030

Mission

Human Life Better

Core Values

Concentration, Challenge, Communication, Collaboration, Change, Creation

HLB has acquired excellent pharmaceutical & biotechnology professionals and established a global network in the drug development.
We are ready to grow into the leading new drug development company based on the 'Global Integrated New Drug Development Platform'

History

Date of Establishment	July 24, 1998	Sales Revenue	97.990 billion won ('23)	Number of Employees	153

1998~2018

1998. Establishment of Energy Solutions Co., Ltd.

2008. Listing on KOSDAQ

2015. Change of company name ; HLB Life Science Co., Ltd.
Approval of Phase 3 for Rivoceranib in Gastric cancer (progressive or metastatic gastric cancer)

2016. Stake Acquisition of Shinhwa Advance, Co., Ltd.
Approval of Phase 1 for Rivoceranib in Gastric cancer (for standard therapy failure and unresectable progressive recurrent gastric cancer)

2017. Approval of Phase 2 for Rivoceranib in Colon cancer (for metastatic colorectal cancer)
Approval of Phase 3 for Rivoceranib in Gastric cancer (optimal supportive therapy for progressive or metastatic gastric cancer)

2018. Acquisition of exclusive domestic license for Rivoceranib and partial profit rights in Japan/Europe.
Stake Acquisition of Life River Co., Ltd. (Present, HLB Cell)
Approval of Phase 1/2a for combination therapy of Rivoceranib+Paclitaxel (for progressive gastric cancer or gastroesophageal joint cancer) /
Approval of Bio-artificial liver

History

Date of Establishment	July 24, 1998	Sales Revenue	99.591 billion won ('23)	Number of Employees	153

2019~2023

2019. Change of Headquarter location (Pangyo, Gyeonggi-do)
Approval of Phase 2 for Rivoceranib in Adenoid cystic carcinoma (Reoccurring or metastatic adenoid cystic carcinoma)

2020. Exclusive Licensing in Korean for Pyrotinib / Change of Headquarter location (Dongtan, Hwaseong, Gyeonggi-do)
Approval of Phase 3 for Pyrotinib in non-small cell lung cancer / Approval of Phase 3 for Rivoceranib/Camrelizumab in Hepatocellular carcinoma
Approval of Phase 1b/2 for the combination of Rivoceranib or Rivoceranib/Trifluridine/Tipiracil in Colorectal cancer)

2021. Establishment of HLB Life Sciences R&D New Drug Research Institute
Approval of Phase 2 for Rivoceranib/Camrelizumab in Primary gastric cancer

2022. HLB Life Science R&D Spin-Off, Exclusive Licensing for a New Anticancer Drug Technology from LSK NRDO → G2M inhibitor
AIM M&A, Transfer to Medicare Division
Approval of Pyrotinib as an orphan drug in non-small cell lung cancer, Clinical approval of Rivoceranib for canine anticancer drugs

2023. Exclusive Licensing for the New Anticancer Drug Technology from LDC (German) → CDK inhibitor
Rivoceranib - Application of U.S. NDA (Liver cancer), Acquisition of conditional NDA in Korea (adenoid cystic carcinoma)
Approval of Phase 3 for Pyrotinib in Breast cancer

HLB Life Science Subsidiary Company Status

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Provision of Total solution ranging from New drug/biopharmaceutical Research and Development to Production and Distribution

5 business units

HLB Life Science

Bio | Medicare | Medical Device | Energy | distribution of medicines

May 2, 2023
Change of main business to pharmaceutical bio

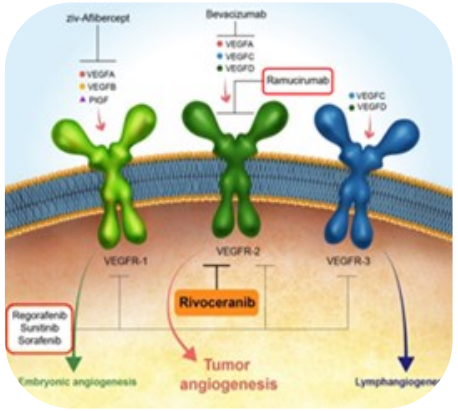
HLB Energy	Shinhwa Advance	HLB Cell	HLB Life Science R&D	HLB Solution
Waste Incineration Thermal Energy - related projects	Medicine distribution	Biopharmaceutical development	New drug development	The solar EPC project

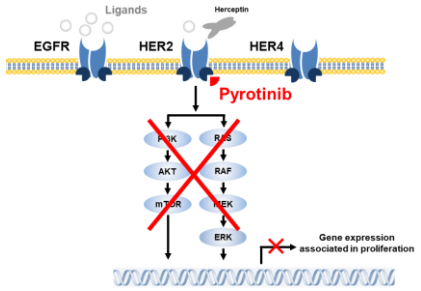
HLB Life Science R&D Platform

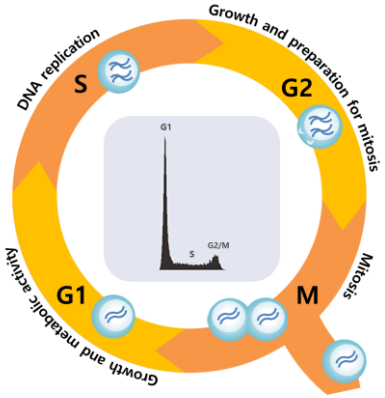
HLB Life Science R&D Platform

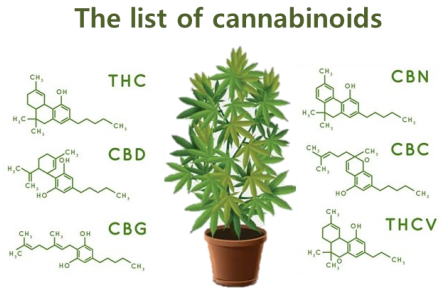
HLB Life Science

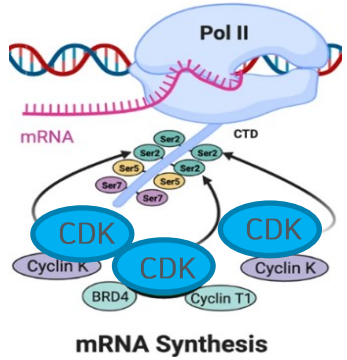
Rivoceranib	Pyrotinib	HLS221-N01	HLS231-N01	HLS232-N01
VEGFR-2 Inhibitor	EGFR/HER2/HER4 Inhibitor	G2M Inhibitor	Cannabinoids	CDK inhibitor











- Rivoceranib inhibits tumor growth by selectively blocking signaling of the VEGF Receptor-2, limiting new blood vessel formation (angiogenesis)
- Pyrotinib is an irreversible dual pan-ErbB receptor tyrosine kinase inhibitor developed for the treatment of HER2-positive advanced solid tumors
- G2M inhibitor interferes with the progression of G2 ► M stage during the cell division cycle (inhibiting the growth of cancer cells and inducing death)
- Cannabinoids have anticancer properties, which can improve cancer therapy. This project determines the potential utility of cannabinoids in the treatment of cancer
- CDK is Ser/Thr protein kinases that regulate transcription and co-transcriptional processes through the activation of RNA Polymerase II

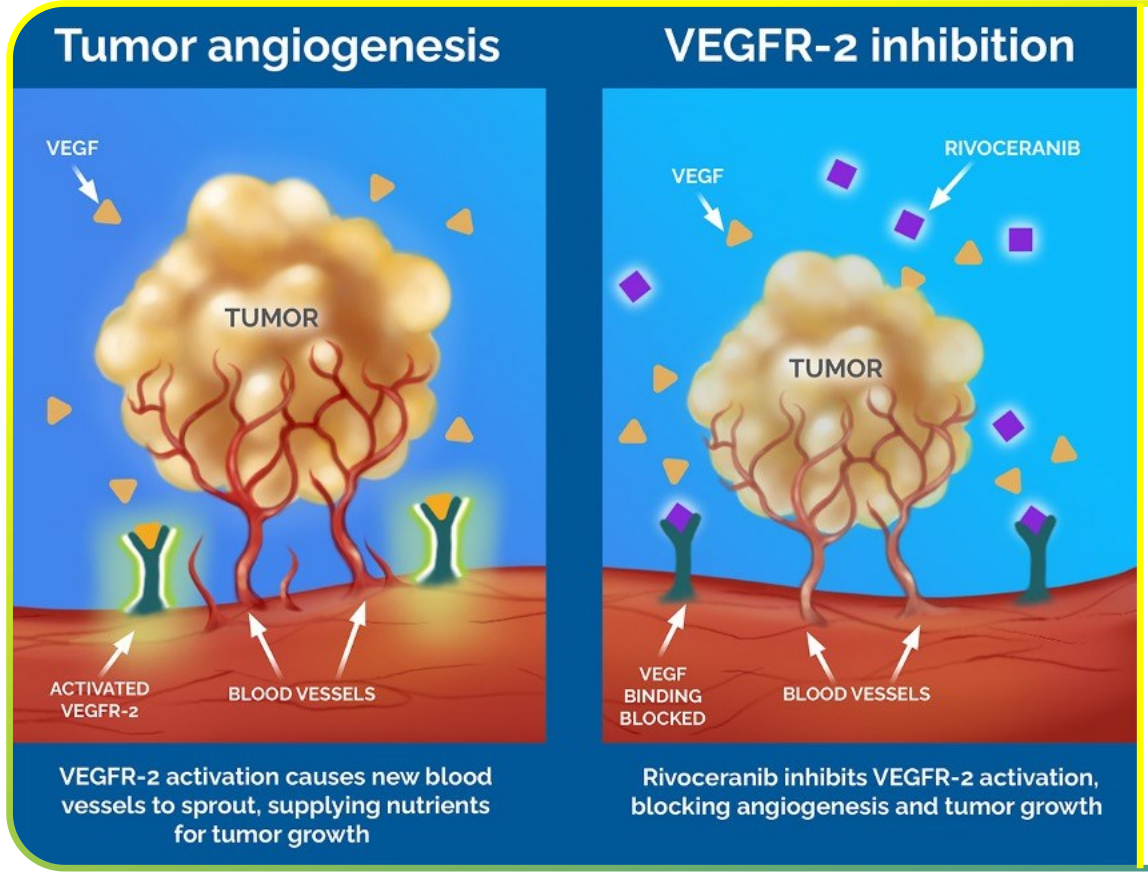
Pipeline Status

Pipeline

HLB Life Science

Project	Indication	Exploration	Preclinical	Phase 1	Phase2	Phase 3	Approved
Rivoceranib	Liver cancer (1st Line, Camrelizumab combination)						FDA NDA May 2023
	Gastric cancer (1st Line, Camrelizumab combination)						
	Gastric cancer (2nd Line, Paclitaxel combination)						
	Gastric cancer (3rd Line, Mono)						
	Adenoid cystic carcinoma (1st Line, Mono)					Withdrawal for conditional approval Dec.2023	
	Colorectal cancer (3RD Line, Capecitabine combination)						
	Canine solid Tumor						
Pyrotinib	Metastatic breast cancer				Phase 3 IND approval (Mar. 2023)		
	Non-small cell lung cancer						
G2M Inhibitor	Solid Tumor	LSK NRDO L/I					
CBD Derivatives	Solid Tumor	NeoCannBio					
CDK Inhibitor	Solid Tumor	LDC					
Medicinal cannabis	Epilepsy						

Angiogenesis



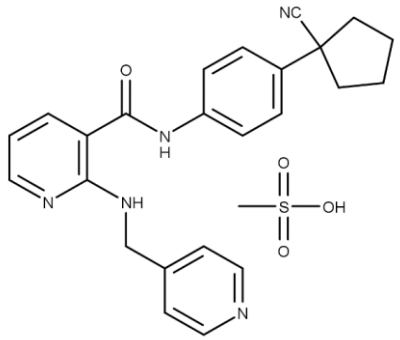
Angiogenesis is a hallmark of tumor development [1]

- Tumor releases vascular endothelial growth factor (VEGF)
- VEGF binds to VEGF receptors on existing blood vessels
- New blood vessels sprout
- Nutrients are supplied to tumor, allowing for rapid growth

Sources: Feng G, Chun Y. Current Cancer Drug Targets. Anti-VEGF/VEGFR2 Monoclonal Antibodies and their Combinations with PD-1/PD-L1 Inhibitors in Clinic. Volume 20, Issue 1, 2020. DOI : 10.2174/1568009619666191114110359

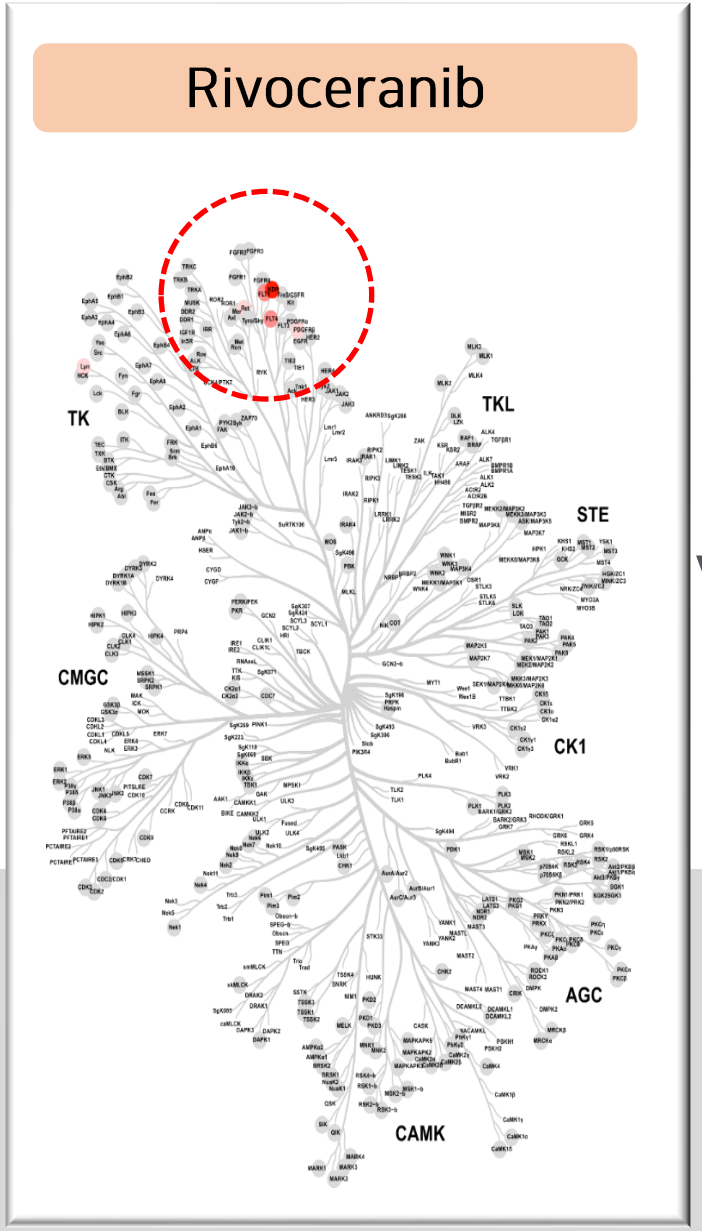
Rivoceranib: Potent & Selective on clinically validated target, VEGFR2

HLB Life Science



"Rivoceranib inhibits tumor growth by selectively blocking signaling of the VEGFR2, limiting new blood vessel formation (angiogenesis)"

Best-in-Class Anti-cancer Drug



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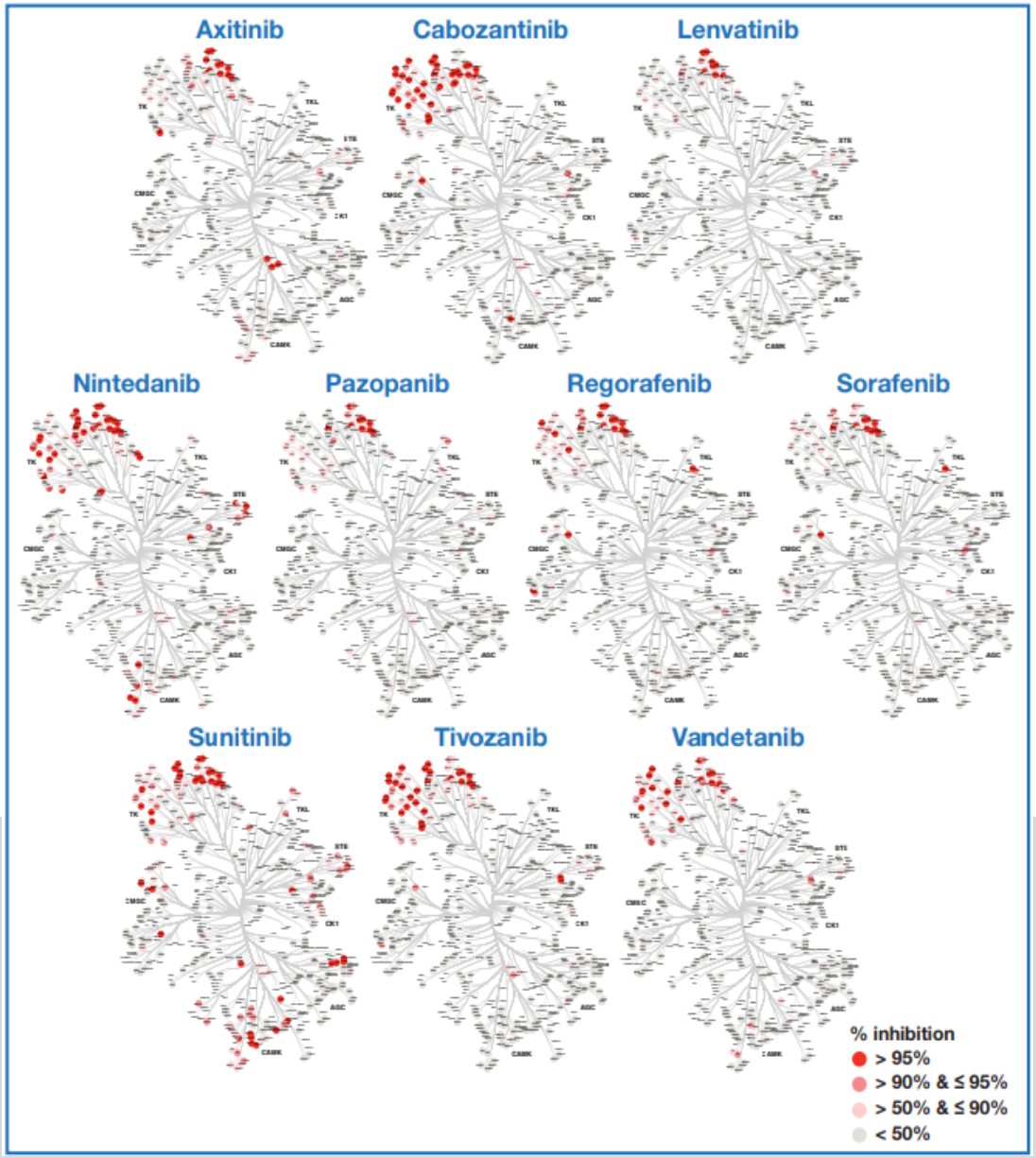

Rivoceranib: Development Status

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- ✓ Phase 3 completion in gastric cancer (2020)
- ✓ NDA submission in AAC (2023, Korea)
- ✓ Liver Cancer NDA Application (2023, US)

- ✓ Orphan drug designation
  (GC: US/EU/KR, ACC: US/KR)

- ✓ Optimized efficacy/toxicity
  (Best-in-Class)

- ✓ First Approval in China (2014)
- ✓ Sales in 2021: US$505M[1]

Ref 1. Hengrui 20121Annual Report

- ✓ Value generation through
  indication Expansion

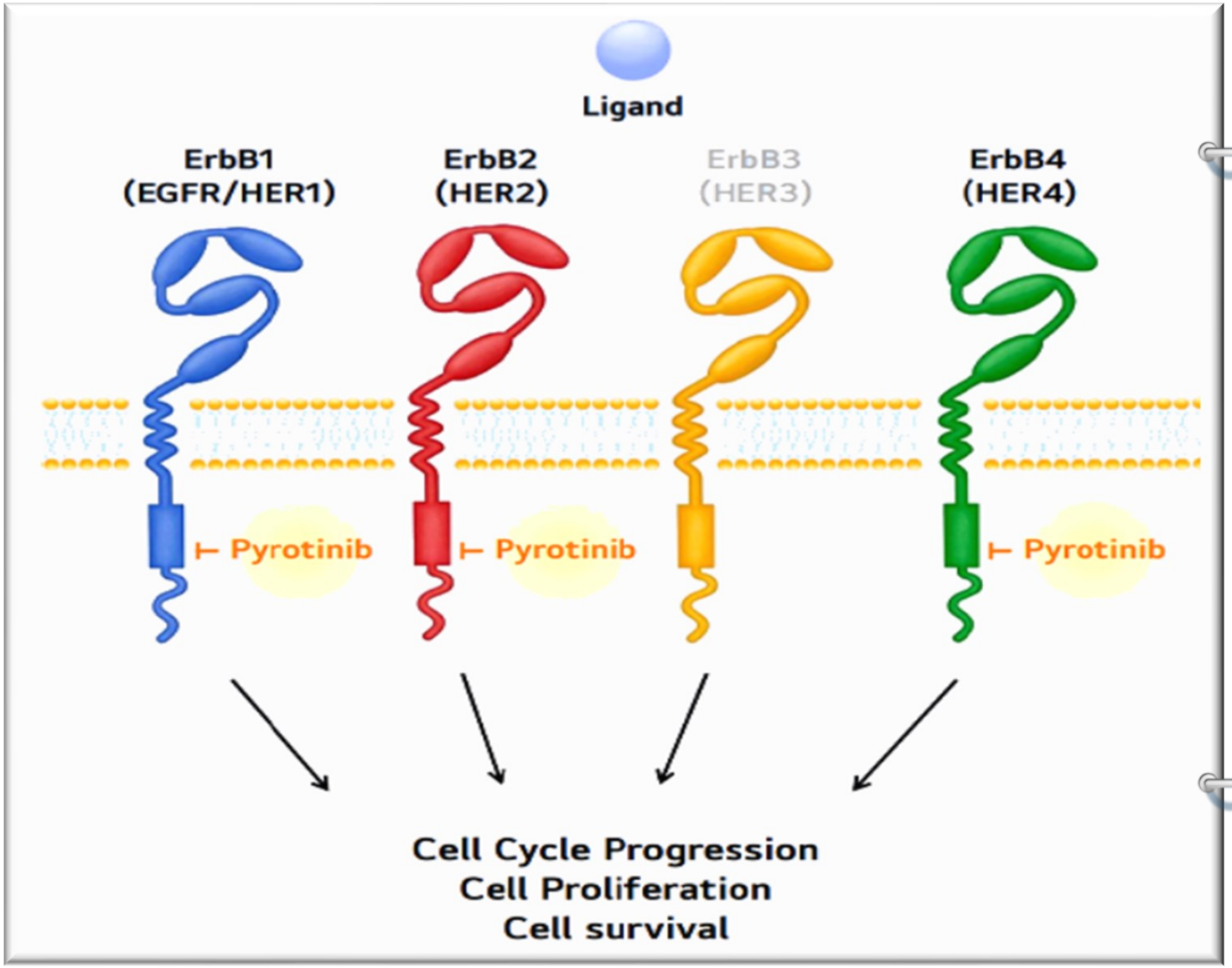
- ✓ Market expansion through combination prescriptions in China
  Expected US$11.4B in 2024 [2]

Ref 2. Datamonitor Healthcare, 2017

Future Plan

- ➢ Promotion of New Drug Approval in Korea market
- ➢ Global market entry and visualizing product sales by alliance with HLB Life Science affiliates or partners
- ➢ Indication expansion based on the medical unmet needs (e.g : Combination therapy research etc.)

Pyrotinib : EGFR/HER2/HER4 inhibitor



Approved indication (China)

Breast cancer

Under Development

NSCLC

TNBC

Gastric cancer

Colorecta cancer

Pyrotinib: Development Status

HLB Life Science

"First approval in China in 2018 → Introduction of exclusive Korean license in 2020"

- ✓ Conditional approval of HER2-positive Breast cancer (2018, Jiangsu Pharmaceuticals, China)
  → Approval completion in 2020
- ✓ Global sales in 2021: US$1.0B[1]

Ref 1. https://dataintelo.com/report/pyrotinib-market

- ✓ Phase 3 clinical trial for Non-small cell lung cancer
  - Orphan drug Designation in Development stage (Korea)
  - Currently conducting global clinical trials in collaboration with Jiangsu Pharmaceuticals

- ✓ Approval of Phase 3 clinical trial IND for HER2-positive breast cancer (March 2023, Korea)

- ✓ Planning to confirm the Anticancer effect through various solid cancers and combination prescription

G2M Inhibitor (New Anticancer Drug)

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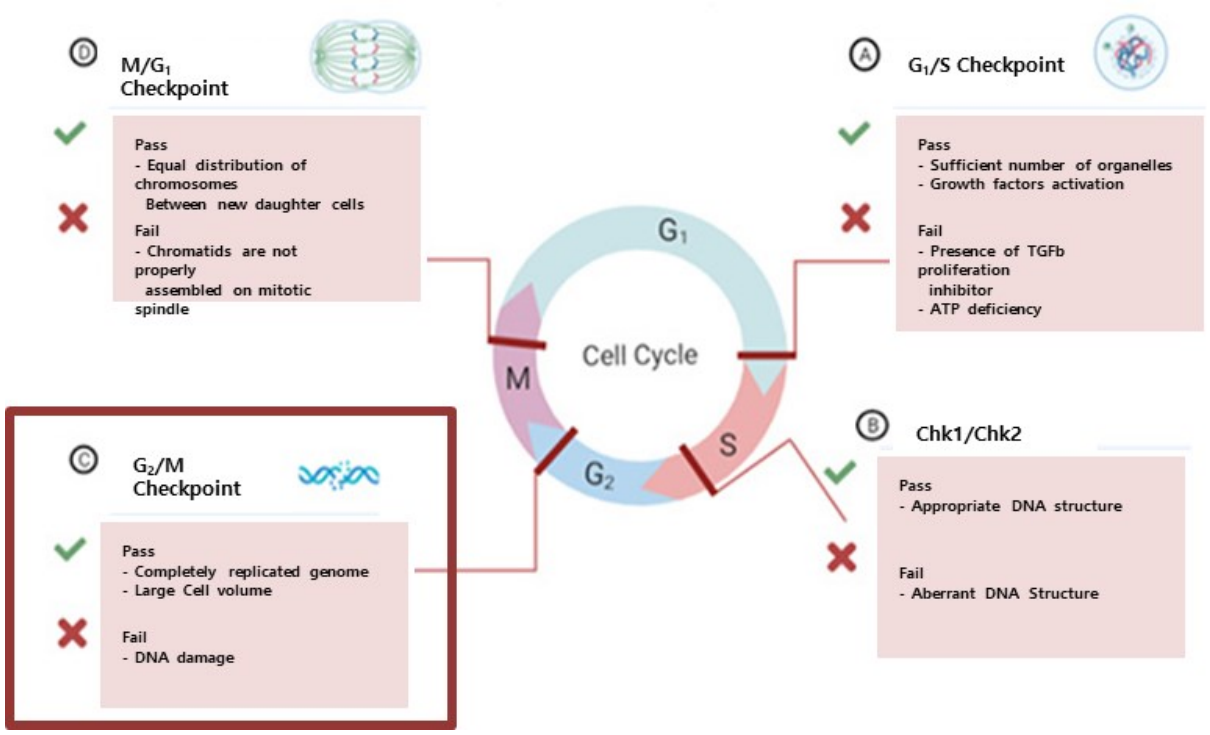
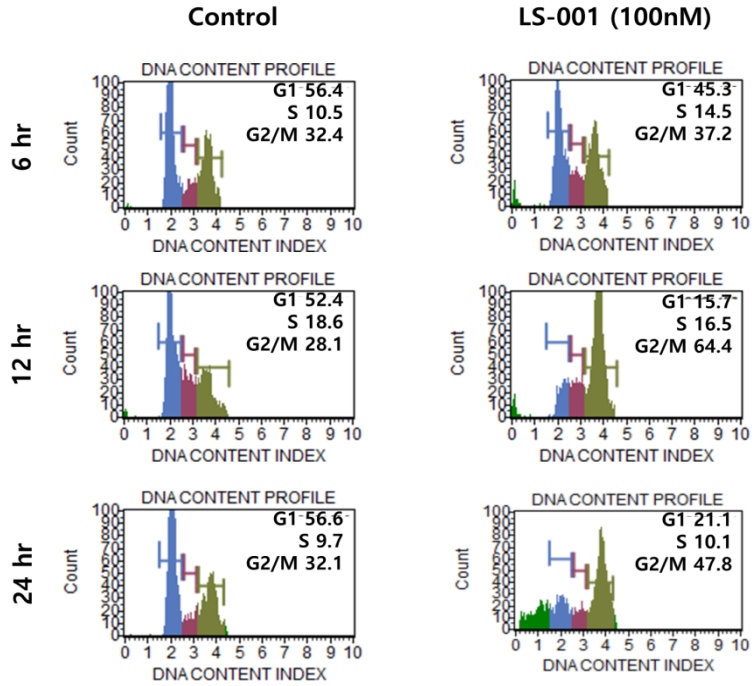
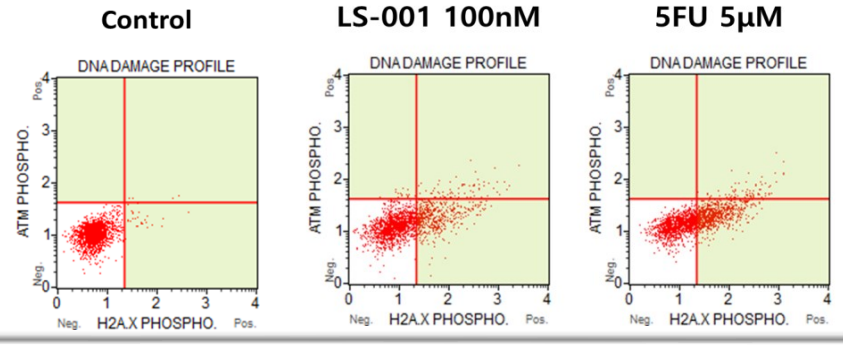
- Cell cycle is the lifetime of a mother cell from its division into two daughter cells until it passes on genetic materials
- Cell division progresses through a cycle of 4 phases (G1 → S → G2 → M) repeating itself.
- Cell division is activated in cancer cells
- A G2M inhibitor inhibits the growth of cancer cells and induces apoptosis by interfering with the progression from the G2 to M phase in the cell division cycle



G2M Cell Cycle Arrest



Apoptosis Assessment



G2M Inhibitor (New Anticancer Drug)

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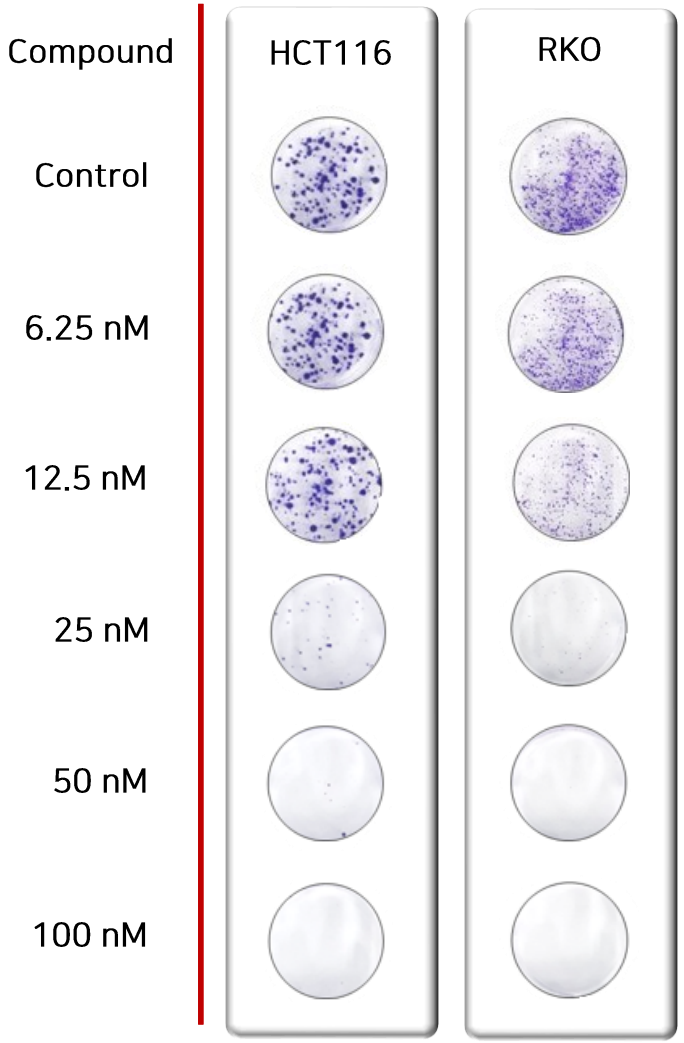
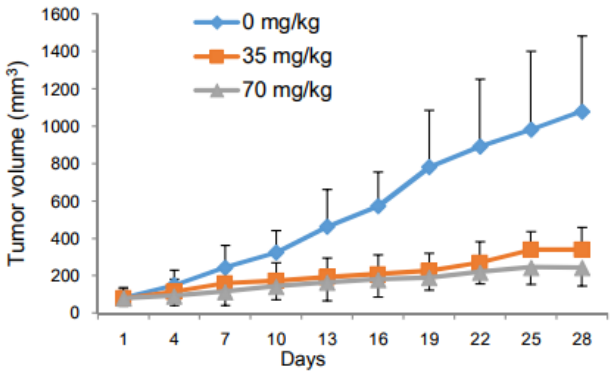
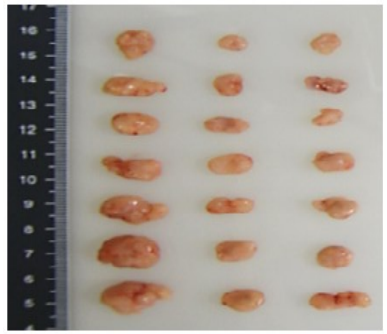
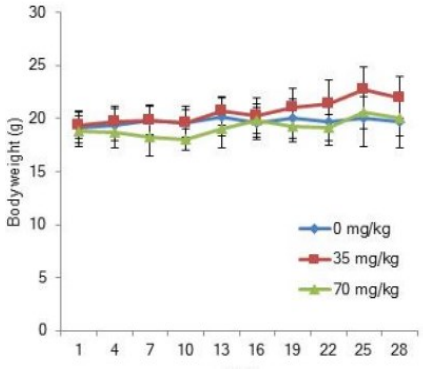
Colony formation Assay in Colon cancer cells



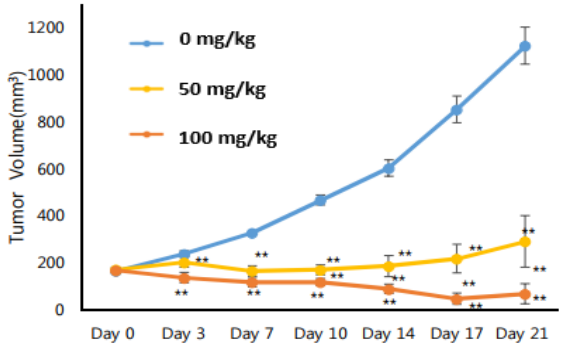
Anticancer efficacy in colon cancer cell transplantation Xenograft model

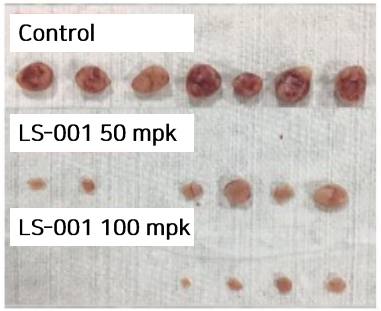


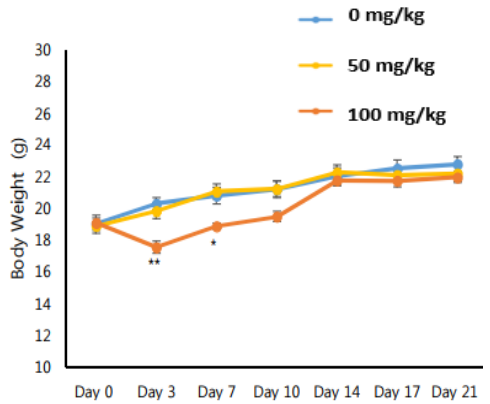




Anticancer efficacy in blood cancer cell transplantation Xenograft model







Cannabinoids derivatives

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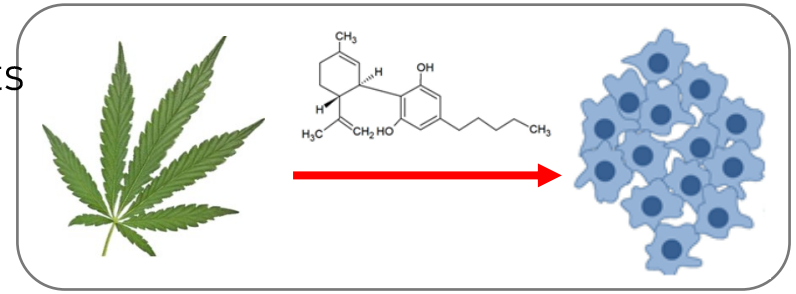
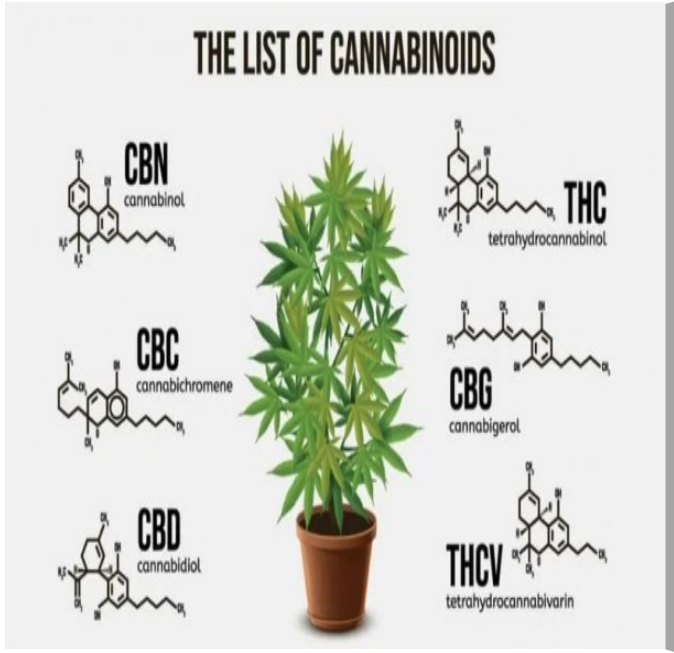
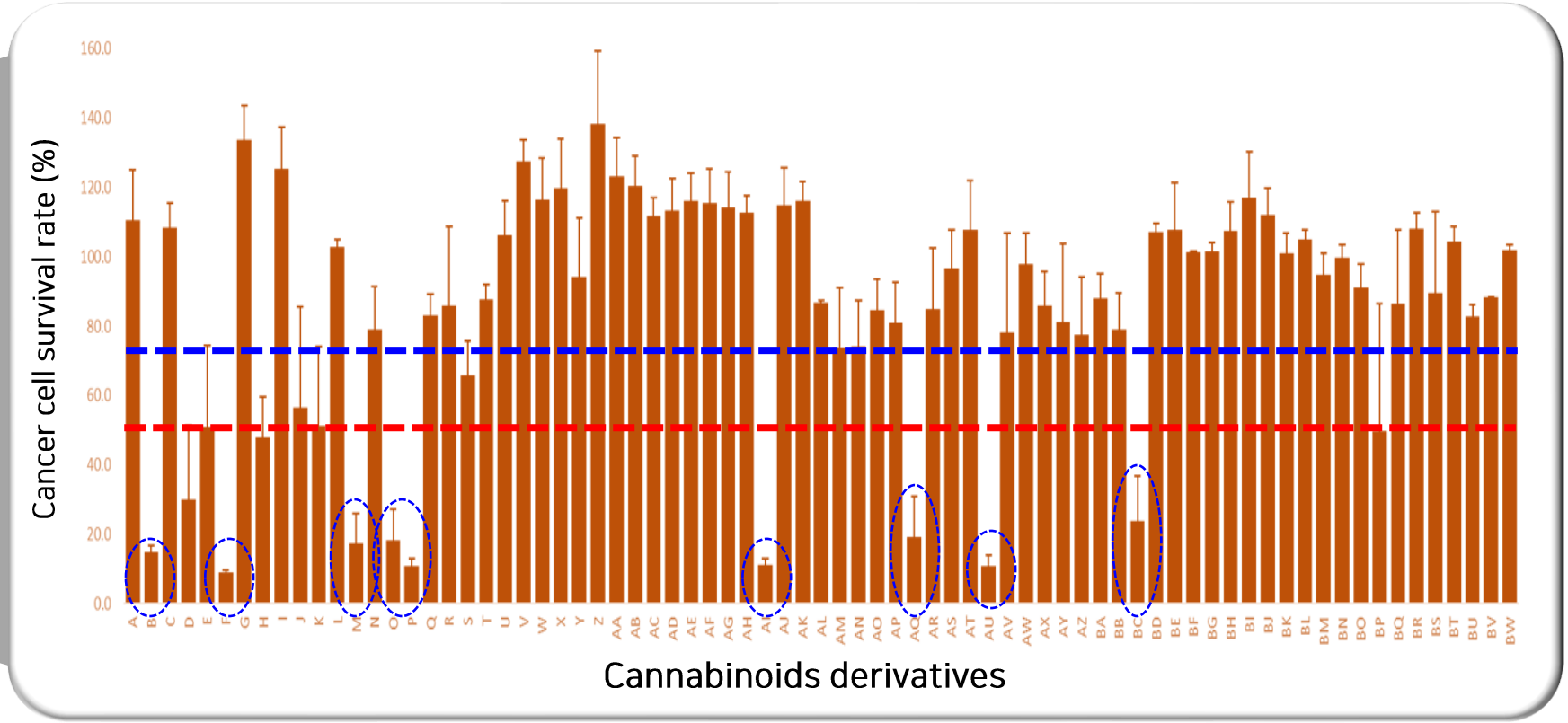
- Cannabinoids have been extensively studied for their potential anticancer effects and symptom management in cancer patients.

  → Screening underway of cannabinoids and their derivatives against cancer







Newly Introduced Anticancer Drug

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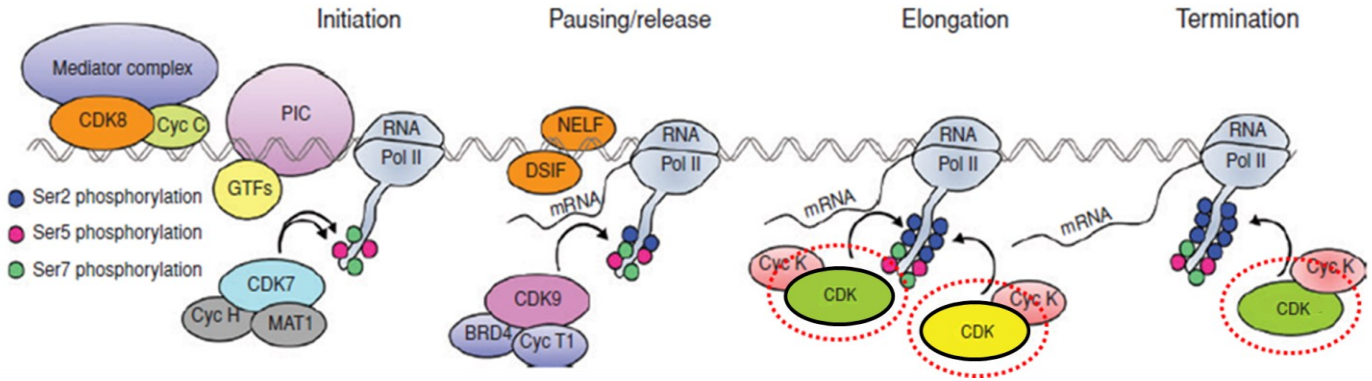
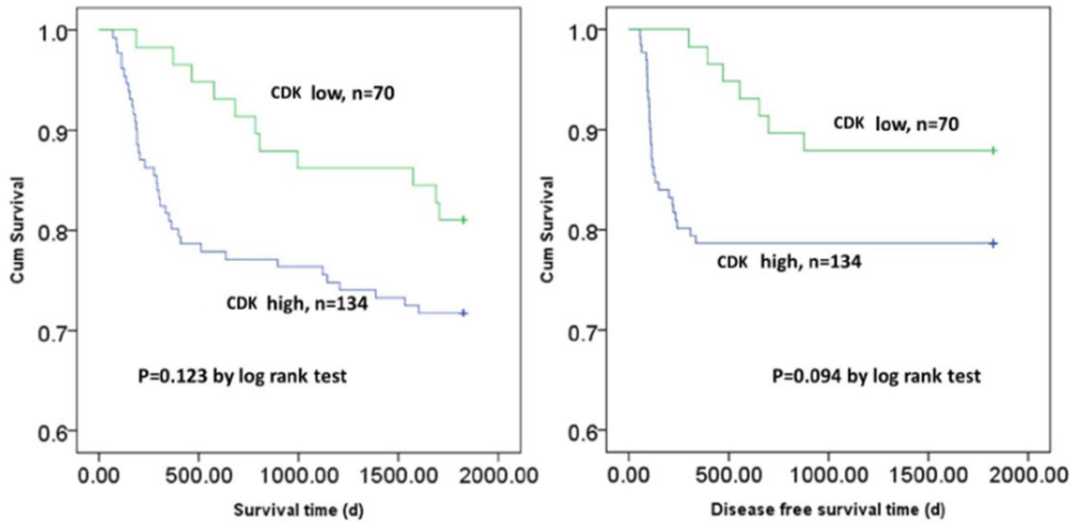
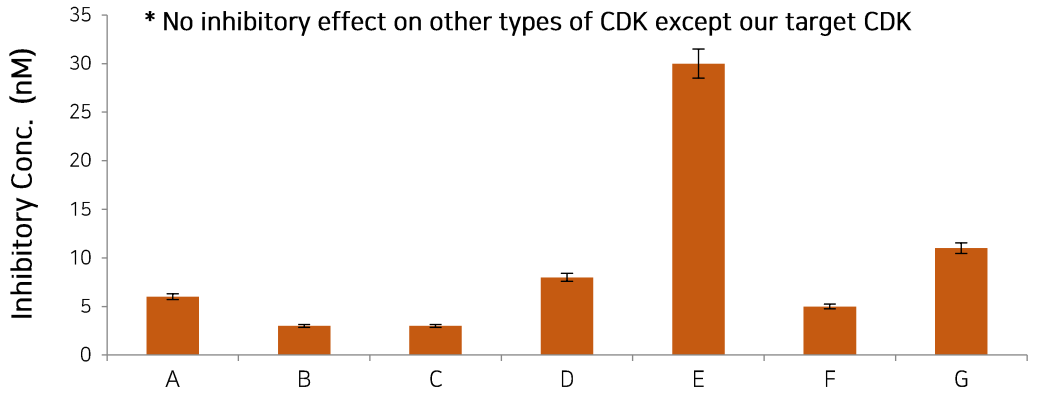
First-in-Class Anti-cancer drug Licensing (Aug 2023)

- First-in-Class Anti-cancer Drug from LDC
  - Induction of cell damage by blocking self-repair mechanisms of cancer cells
- Development underway; in pursuit of global development and licensing out

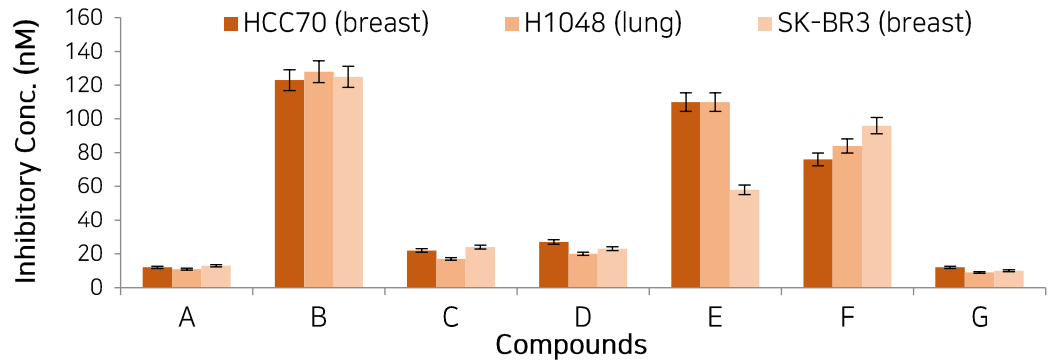




CDK Selectivity



Anticancer effect in breast and lung cancer cell



Medicinal Cannabis Business

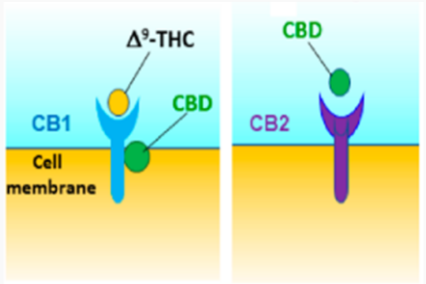
HLB Life Science

Cannabis: Globally acclaimed as the uncharted green biomaterial !!!

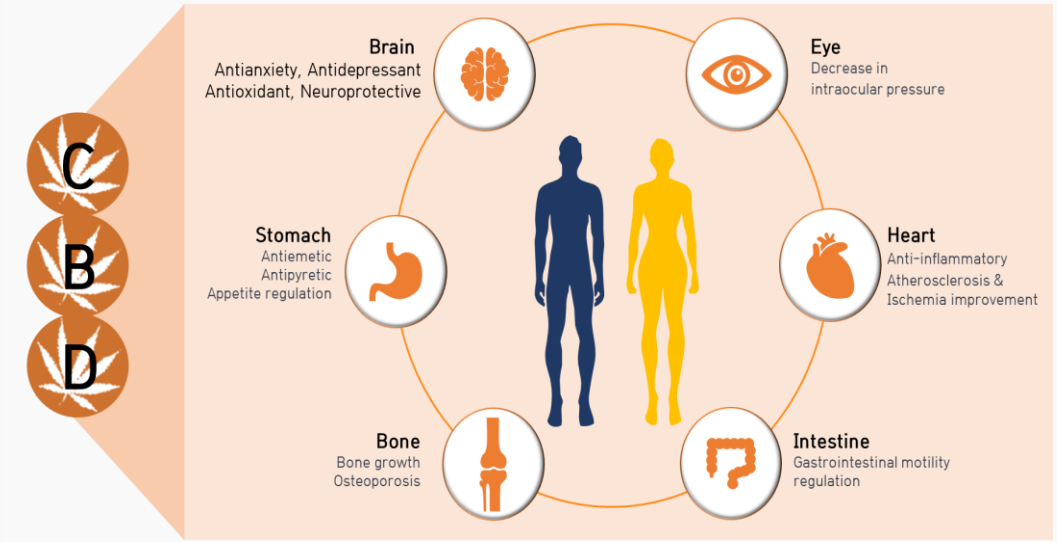
THC vs CBD

Human Endocannabinoid System

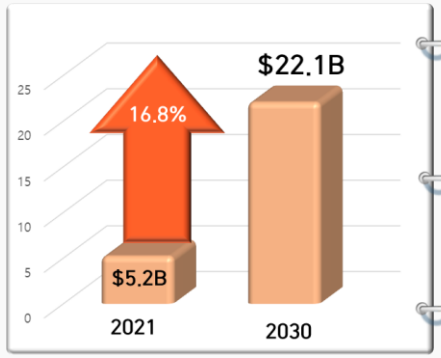
THC (Delta-9-TetraHydroCannabinol)
- Cannabinoid Receptor 1 (CB1)
- Located mostly in the brain, central nervous system
- Causes addiction and Hallucinogenic effect
- Key hallucinogenic compounds in Cannabis (Psychoactive)

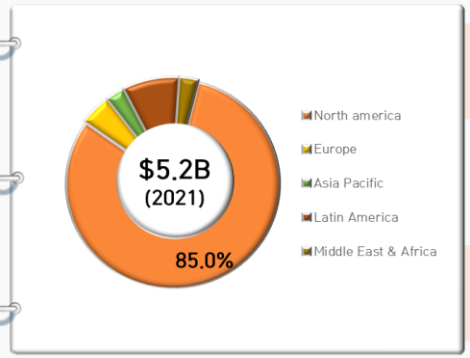


CBD (Cannabidiol)
- Cannabinoid Receptor 2 (CB2)
- Found throughout body Mostly in the immune system
- Pain relief, Anti-inflammation, seizure control
- Key pharmacological component of Cannabis (Absence of dependency)



Global Cannabidiol Market Size





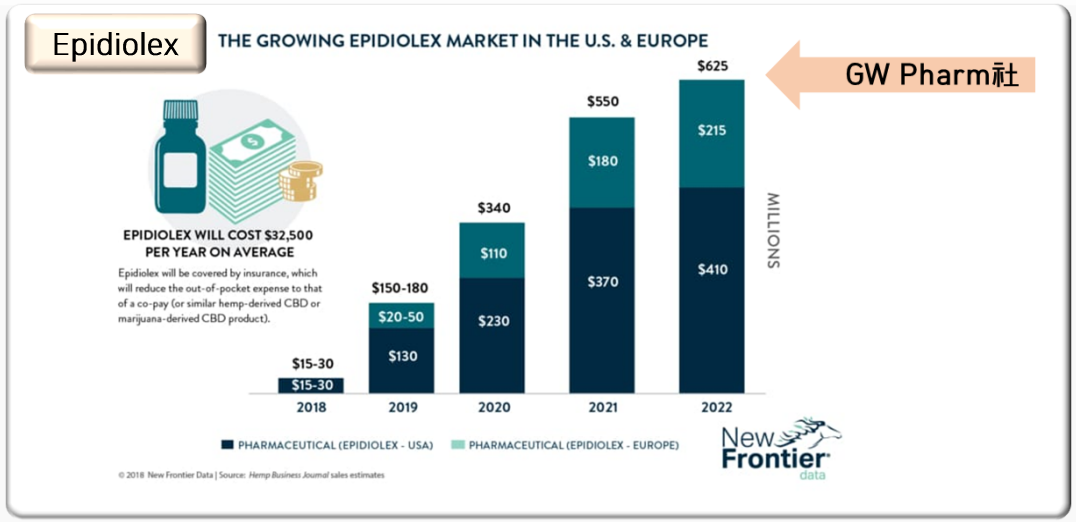
North America Market Value (2021) USD4.4B

Market Value (2030) USD17.4B

Drug Development Status

Drug Name	Generic Name (API)	Manufacture	Country	Approval status Approved country	Efficacy
MARINOL	Dronabinol (delta-9-THC)	AbbVie Inc.	U.S	FDA (1985) US	• Relief for cancer treatment patients' nausea and vomiting • Anorexia in AIDS patients
CESAMET	Nabilone (delta-9-THC)	Bausch Health (fka Valeant Pharm.)	Canada (US)	FDA (1985) US, UK, Germany	• Relief for cancer treatment patients' nausea and vomiting • Sedative and antipsychotic effects
SATIVEX	Nabixmols (delta-9-THC, CBD)	Jazz Pharm (fka GW Pharm.Ltd.)	UK	EMA (2016) UK, Germany, France, Australia	• Relief of spasticity due to multiple sclerosis
EPIDIOLEX	Cannabidiol (CBD)	Jazz Pharm (fka GW Pharm.Ltd.)	UK	FDA (2018) US, EU, Canada, Japan, Korea	• Alleviation of seizure symptoms

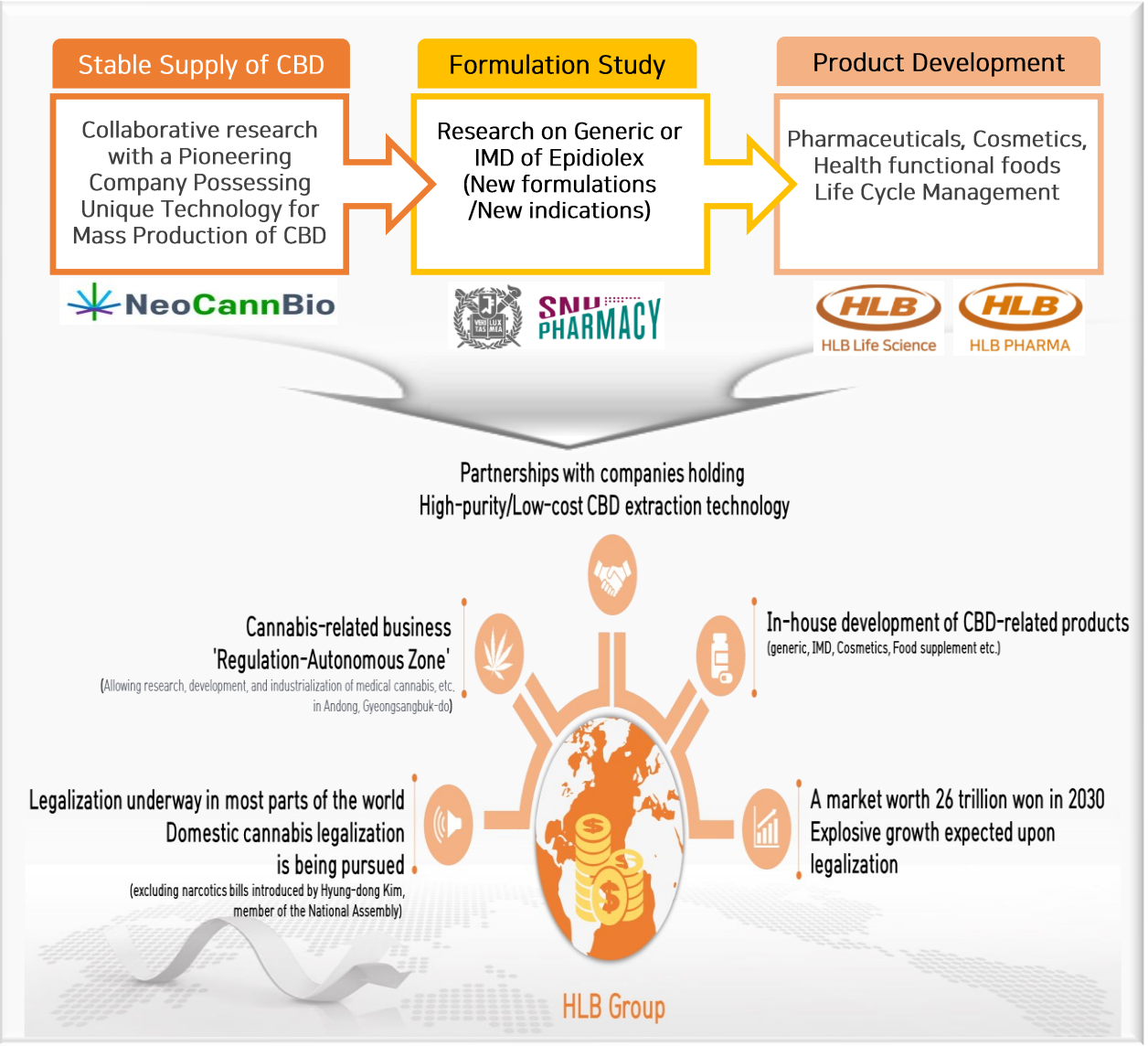
Medicinal Cannabis Business



In Korea, following the 2018 revision of the Narcotics Control Act,
medical use of cannabis for specific purposes has been conditionally approved.
This allows for purchase through the Korea Orphan & Essential Drug Center.
However, it is very expensive!
Although covered by insurance, the high price has a negative impact
on the financial situation of National Health Insurance Service

Epidiolex: Self-treatment for epilepsy with CBD component			Sativex: Multiple sclerosis reliver with THC/CBD (2019)		
	Import cost Approx.₩1.6M	Per patient Approx. ₩40M/year		Import cost Approx.₩3.7M	Per patient Approx. ₩45M/year

Needs for Domestic Cannabidiol products



Open Innovation

HLB Life Science

Status of Progress by year

	Review	MTA	Due Diligence	Term sheet
'22	135	28	4	2
'23	96	3	4	1

- Expansion of Anticancer Pipeline
- Early Entry into Clinical Phases
- Acquisition of New Platform

...ti-cancer drug ...license-In (Aug 2023)

BioSpectator

HLB생명과학R&D, 獨 LDC와 '표적항암제' L/I 계약

기사입력 : 2023-08-09 11:19 | 수정 : 2023-08-09 11:19

바이오스펙테이터 서윤석 기자

계약금 등 상세내용 비공개..특정 유전자 전사 억제기전

BIO-EUROPE SPRING®
MARCH 28-30, 2023 // DELIVERED DIGITALLY

BIO International Convention
Coming to Boston in 2023

InterBiz 2023 Bio-Partnering & Investment Forum

인터비즈 InterBiz
바이오 파트너링 & 투자포럼 2023

29TH ANNUAL INTERNATIONAL PARTNERING CONFERENCE
BIO-EUROPE®
NOVEMBER 6-8, 2023 | MUNICH, GERMANY

2024. 02. 21

HLB Life Science contracted MOU with Atheonbio for the co-development of cancer diseases

2024. 03. 06

HLB Life Science contracted business promotion agreement for commercialization of Rivoceranib-Camrelizumab

HLB Life Science Roadmap

HLB Life Science Roadmap

HLB Life Science

HLB Life Science Bio Business

HLB-LS New Compounds
Development of new anticancer drugs
Planning of L/O

Rivoceranib
Continuous Indications expansion
Animal anticancer drugs

Pyrotinib
Expansion of new indications

Cannabinoid
Treatment of Epilepsy
Discovery of new indications (anticancer drugs)

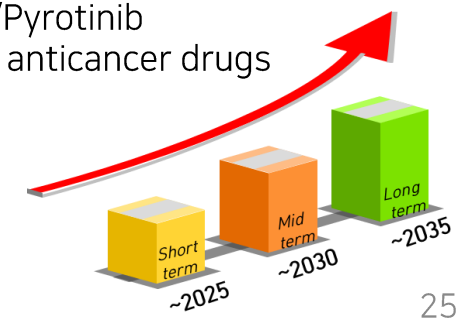
Research-Oriented Global Pharmaceutical Company

- Development of targeted anticancer drugs with global competitiveness
- Collaboration with global partners through R&D-focused development capabilities
- Leading the Development of Innovative and Differentiated Anticancer Drug

~2025
Life Cycle Management (LCM)
- Successful launch of Rivoceranib/Pyrotinib and indication expansion
- Establishment of novel anticancer pipelines

~2030
Visualizing Product Sales and Global expansion
- Visualizing sales of Rivoceranib/Pyrotinib
- Entering Clinical Trials with new anticancer drugs and Pushing for L/O
- Expansion of CBD business

~2035
Visualizing Achievements with New anticancer drugs
- Entering Clinical Trials with New Anticancer Drugs
- Successful Global L/O



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Thank you

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