

Leading with Science for Sustainability

# LG Chem

We Connect Science

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Introduction of LG Chem

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Introduction of LG Group — LG Group

#### LG Group | History

Industrial Co.

(now LG Chem)

Established as Established as a New Established as LG Group spined-off LX Group Goldstar Co. Corporate Identity LG Corp. (now LG Electronics) (Lucky Goldstar → LG) 2021 1995 2003 1958 1947 1987 1996 2017 Established as Established as LG Group's 70th Completed 'Lucky Gold Star Tower' Lucky Chemical LG Telecom Anniversary

(now LG U+)

#### LG Group | Affiliates

#### Chemicals



LG Chem
LG Energy Solution
LG Household & Healthcare
etc.

#### Electronics



LG Electronics LG Display LG Innotek etc.

# Telecommunications & services



LG U+ LG CNS LG Sports etc.



Affiliates

63

\*Overseas Corporations 290(Approx.)



Workforce(Worldwide)

270,000 (Approx)



Annual Revenue

KRW 202trn

(Approx.)

Introduction of LG Chem \_\_\_\_\_ LG Chem

#### LG Chem | History

Since its founding, LG Chem is vigorously moving forward towards a sustainable future



1947	Established as Lucky Chemical Industrial Corporation
1969	Listed on Korea Stock Exchange
1974	Renamed as Lucky Corporation
1976	Completed construction of Yeosu PVC Resin Plant
1979	Opened Daedeok Central R&D Center
1991	Developed the world's first 4th-generation cephalosporin antibiotics
1995	Renamed as LG Chem, Ltd. Completed construction of Tianjin PVC plant in China

2001	Spinned off business entities (LGCI, LG Chem, LG Household & Healthcare)
2003	Acquired Hyundai Petrochemicals Factive became first Korean new drug to receive U.S. FDA approval
2004	Developed the world's first nanotechnology-applied new EP material
2005	Established LG Chem (China) Investment Co., Ltd. Established a sales subsidiary in Europe (in Germany)
2007	Merged with LG Petrochemicals Co., Ltd
2008	Develped Korea's first metallocene-based elastomer
2009	Spinned off Industrial Materials Business (now LX Hausys)

2016	Acquired Dongbu Farm Hannong (Farm Hannong)
2017	Merged with LG Life Sciences Co., Ltd.
2020	Spinned-off battery business (now LG Energy Solution)
2021	Launched LETZero of Eco-friendly Materials brand Acquired separator business
2022	Established a separator joint venture LG-Toray (in Hungary)
	Established a Cathode Material joint venture LG-HY BCM (in Gumi
2023	Acquired AVEO Oncology Started construction of Cathode Material Plant (in Tennessee)
2024	Completed construction of Asia's first supercritical pyrolysis plant Established a HVO joint venture LG-ENI BioRefining(in Daesan)



Top 10 Strongest\* Chemicals Brands 2024

1	<dupont></dupont>	_	2024 : \$8.36bn 2023 : \$8.353bn	
2	<b>(</b> LG Chem	-	2024 : \$8.36bn 2023 : \$8.353bn	
3	حباب خماءزد	<b>A</b>	2024 : \$8.36bn 2023 : \$8.353bn	
4	■ ■ BASF We create chemistry	•	2024 : \$8.36bn 2023 : \$8.353bn	
5	Linde	-	2024 : \$8.36bn 2023 : \$8.353bn	
6	Givaudan <b>°</b>	<b>A</b>	2024 : \$8.36bn 2023 : \$8.353bn	
7	<b>○</b> Air Liquide	<b>▼</b> 1	2024 : \$8.36bn 2023 : \$8.353bn	
8	Dow	<b>A</b> 3	2024 : \$8.36bn 2023 : \$8.353bn	
9	<b>D</b> DSM	<b>1</b>	2024 : \$8.36bn 2023 : \$8.353bn	
10	Shir Etsu		2024 : \$8.36bn 2023 : \$8.353bn	

<sup>\*</sup> Source: Brand Finance Group, U.K.

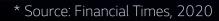
# Brand value of chemical companies

# "Global No.2"

\* Strongest Brand : A metric indicating the influence and status of the brand itself, excluding financial performance

# Prospering In the pandemic TOP 100





To achieve our vision, "We Connect Science to Life for a Better Future," LG Chem will become Top Global Science Company that leads with Science for Sustainability.

# We Connect Science to life for a Better Future



Leading with Science for Sustainability.

#### LG Chem | Sustainability Roadmap

Through the implementation of our sustainability strategy, we will secure future growth engines and enhance ESG competitiveness.

### **LG Chem Innovative Sustainability**

Vision

Deliver advanced, innovative and sustainable solutions for our environment and society

Strategic Directions

Leading Sustainable Innovation for Customer Managingthe Impactsof Climate Change

(+)

Making a Positive Contribution to Society

Key areas

Responsible Products \*
Circular Economy \*
Environment Protection (ZWTL) \*

Zero Waste to Landfill



Climate Action \*
Renewable Energy \*
Water Management \*



Responsible Supply Chain \*
Human Rights / Diversity
Safety / Wellness

LG Chem | Decarbonization Strategy for Sustainable

# Towards Top Global Science Company

Carbon-neutral growth by 2030, Net-Zero by 2050



Acceleration of low-carbon transition

Expansion of eco-friendly product portfolio

Transition to renewable energy

Offset carbon emissions



Enhancement of competitive edge in low-carbon products

Introduction of new processes and expanded use of eco-friendly raw materials and fuels

Establishment of Scope 3 management standards and implementation system for low-carbon strategy in the supply chain



Implementation of Net-Zero through partnerships

Demonstration of global leadership to combat Net-Zero

Development of innovative technologies and a circular economy through cross-industry collaboration

# Towards Top Global Science Company

Strengthening of Growth Engine Business



Sustainable business centered around eco-friendly materials

Develop eco-friendly bio materials

Establish circular economy of waste plastics

Foster renewable energy material business



Towards World's Top Comprehensive Battery Materials Company

Produce first-rate cathode materials in the world

Expansion of higher value-added battery materials business

Reinforce R&D for next-gen battery materials



World-class innovative drug development

Enhancement in the quality of new drug pipeline

Develop global clinical trials and growth business

Bolster investment in R&D for new drug development

LG Chem | Technology Innovation for Sustainable

Towards Top Global Science Company

World-class Science company with strong R&D capability



Fostering high-value & Eco-friendly technologies

High-value innovative in differentiation technology

HVO & Chemical Recycling technology

CO2 capture/utilization technology

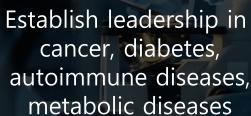


Improve battery performance and safety Develop next-gen battery materials

Cost innovation / high-capacity cathode material

Safety material for suppressing and preventing thermal runaway

Development of next-generation materials (Dry Electrode, materials for all-solid-state batteries)



Acceleration of global clinical Development for major new drugs

Multi-modality strategy : synthetic, bio, cellular therapeutics

\* Various approach to drugs



#### LG Chem **Eco-friendly Materials Brand**



#### **Eco-friendly Materials Brand LETZero**

A compound word of "Let" and "Zero," which means "to turn harmful substances to the environment and the net increase in carbon emissions into zero."

#### LETZero Product Line



Produce the PCR materials by mechanical and chemical recycling enables the recycled waste plastics



PCR (Post Consumer Recycled) ABS, PC, PC/ABS, PE, PP, PVC, Plasticizers



Circular Balanced Applicable to most materials Produced by LG Chem



👸 Bio Material

Reduce fossil fuel consumption and carbon emission by incorporating raw materials in the manufacturing process



Bio-Based PA, PLA



Bio-Circular Balanced

Applicable to most materials Produced by LG Chem



Decompose into carbon dioxide, water and biomass through the composting process



Representative Materials COMPOSTFUL<sup>TM</sup> PLH

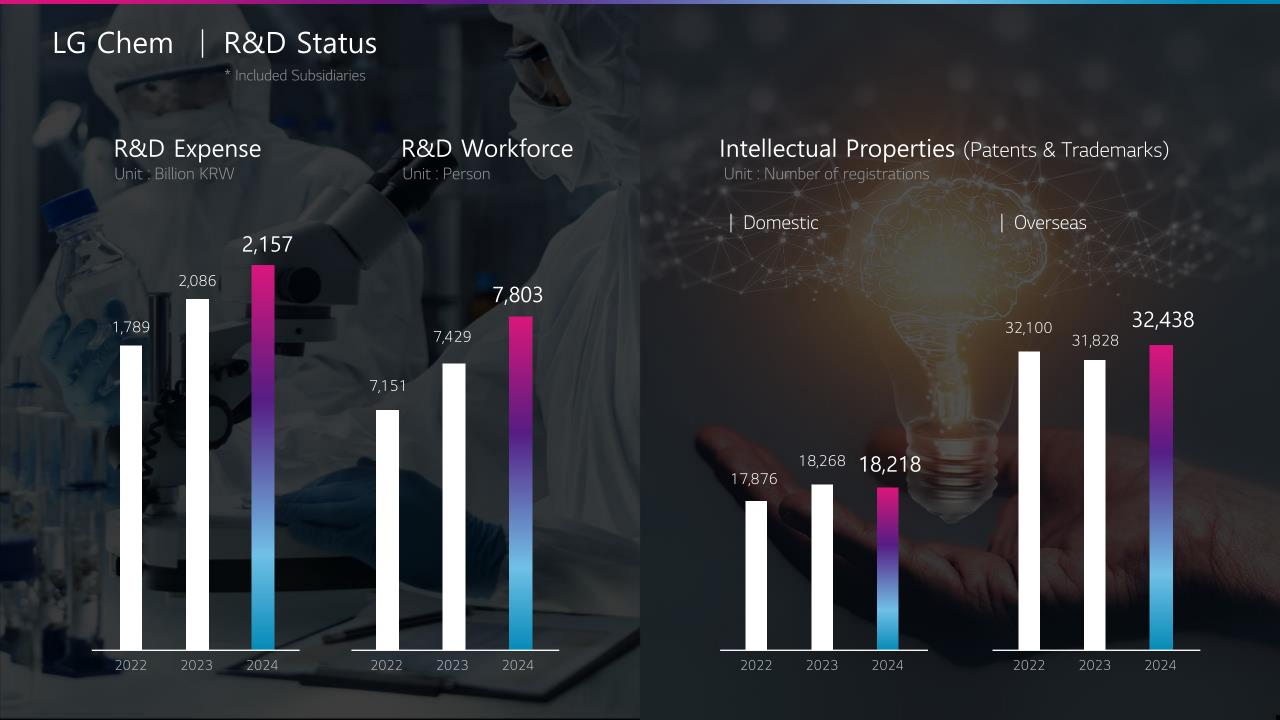
#### LETZero Co-Marketing



BCB (Bio-Circular Balanced) Descent Shoe Insole with BCB materials



PCR (Post Consumer Recycled) Electric Vehicle Chargers with PCR materials



#### LG Chem | Financial Results

\* Included Subsidiaries



Sales in 2024

KRW 48.9trn (Approx.)



Workforce

18,750(Person)

Domestic 13,920 / Overseas 4,830



Sites of business

65

Domestic 17 / Overseas 48



Operating profit

(Unit : Tillion KRW



#### LG Chem | Domestic Sites



Headquarter/R&D Campus Magok-(Est.1987/Est.2018)



Leadership Center / CS Center-(Est.1991/Est.2019)



R&D Campus Daejeon (Est.1979)



Osong Plant (Est.2009)
Bio Similar, Vaccine



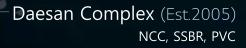
Iksan Plant(3)(Est.1991 / Est.1995/Est.2011) EP, ABS / Pharmaceutical / Cathode Material



Naju Plant (Est.1984) Octanol, Butanol, Plasticizers



Yeosu Complex (Est.1976) NCC, PVC, ABS, SAP, PE, AA





Ochang Plant (Est.2005)



Cheongju Complex(2)(Est.1980 / Est.2009)





Gimcheon Plant (Est.2008)

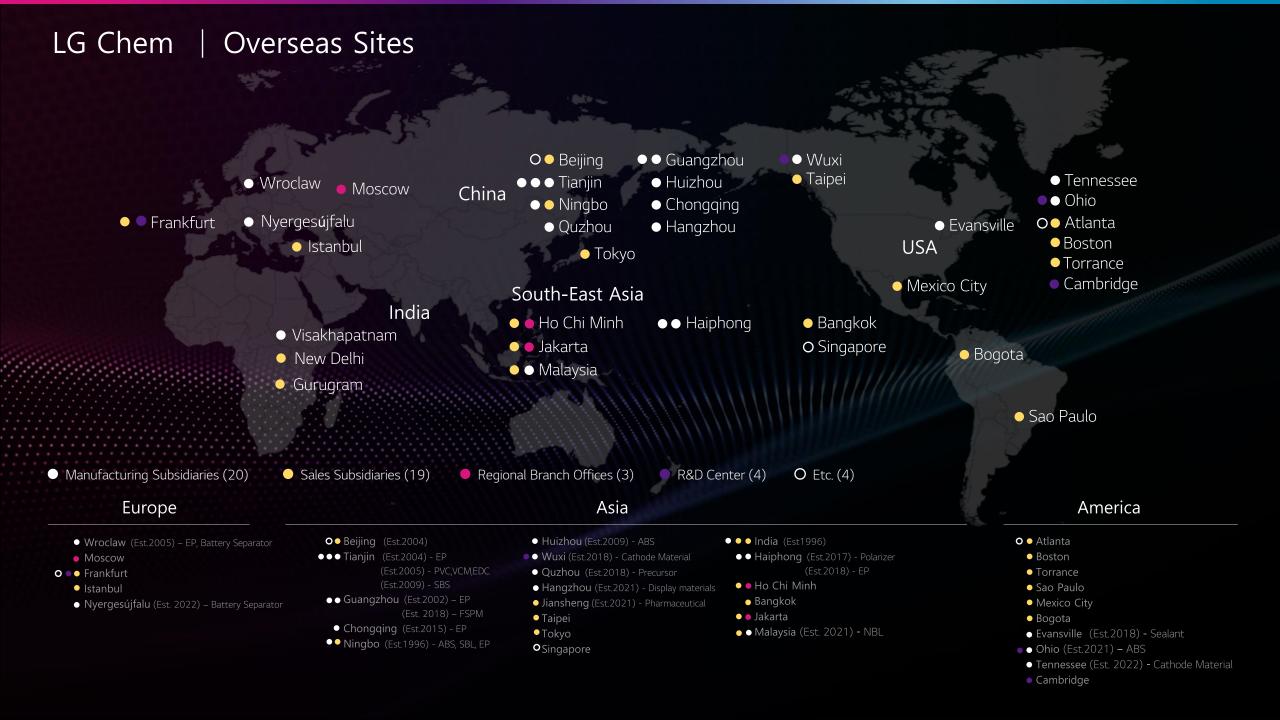




Onsan Plant(Est.1979)

Fine Chemical





#### LG Chem | Business Area



- Sustainability
- NCC / Polyolefins
- PVC / Plasticizers
- ABS
- Acrylates / SAP
- HPM(High Performance Materials)
- Catalyst



- Cathode Materials
- Battery Separator
- Engineering Materials
- Electronic Materials
- Water Solutions



- Primary Care
- Specialty Care
- Aesthetic
- AVEO Oncology

01

Introduction of LG Chem

# Petrochemicals Company



#### Petrochemicals Company

Establishment (Year)

1976

Sales (<del>W</del>) \*As of 2024

19.1trn (Approx.)

Workforce (Person)

Domestic 6,078 / Overseas 2,270

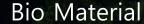
**Business Area** 

Petrochemical Products

	2024	Established of Asia's first supercritical pyrolysis plant and next-generation insulator plant (Dangjin) Established the CS Center of Ohio in USA Established the joint venture for eco-friendly fuel HVO (LG-ENI BioRefining)
	2023	Launched COMPOSTFUL™ of compostable brand Established the CS Center of Europe in Germany
	2022	Launched Asia's first plant-based eco-friendly ABS
	2021	Acquired *ISCC for Korea's first eco-friendly (bio-circular balanced, Chemical Recycle) product. * ISCC (International Sustainability and Carbon Certification) Launched digital CRM system LG Chem On
	2019	Established the largest petrochemical tech center in Korea (Osan CS Center)
	2015	Established the CS Center of Hwanam , Guangzhou in China
	2003 ~ 2010	Acquired Dow Polycarbonate business(10) Merged with LG Petrochemicals Co., Ltd.('07) Acquired PVC Business of Hyundai Petrochemicals Co., Ltd.('03)
	1995 ~ 1998	Established Manufacturing Subsidiary in China / India / Vietnam (PVC, ABS)
Į	1976	Completed construction of Yeocheon PVC resin factory Entry into the petrochemical business

# Providing Sustainability Solutions with Eco-Friendly Materials





- Mass-produced world's first bio-circular balanced SAP, launched Asia's first bio-based ABS
- Acquired 50+ ISCC Plus-certified Bio-Circular Balanced(BCB) products
- Stable sourcing of raw materials through internalization of bio-based material production and partnerships
- Obtained international compostability certifications and complies with food contact substance regulations











#### Recycling

(Establish circular economy of waste plastics)

- Holding a product portfolio of global brands (PCR), Acquired 50+ ISCC Plus-certified Circular-Balanced(CB)products
- Secured a stable pool of raw material supplies through a technology partnership on chemical recycling with MURA
- Established a closed loop through strategic partnerships
- Operation of Asia's first supercritical pyrolysis plant

#### **Production Capacity** (As of 1Q, 2025)

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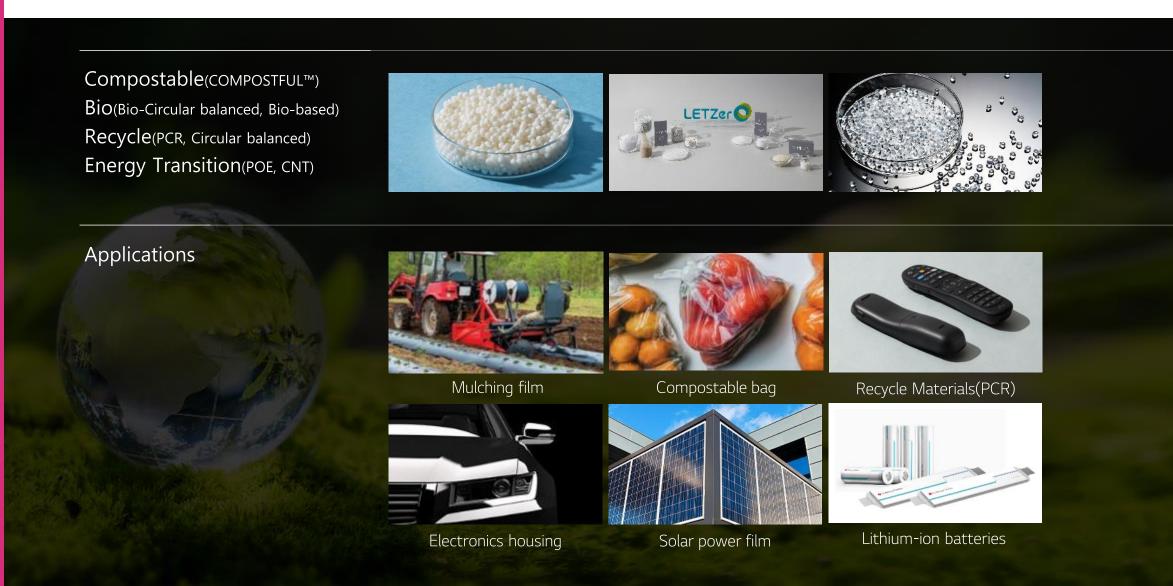
Ethylene	3,350	HDPE	550	Acrylic Acid	650
Propylene	1,980	LLDPE	600	IPA	205
BD	510	PP	380	NPG	175
BZ	900	LDPE/EVA	460	Synthetic Rubber	365
BPA	505	PVC	1,100	Specialty Resin	310
ABS/SAN	2,380	Plasticizer	175	POE	380
PS	40	Alcohol	145	CNT	3
EPS	90	PC	170	SAP	500
Aerogel	200,000m <sup>2</sup>	NAOH	1,000	NBL	555
Chemical Recyc	tle 20	Binder	23		



#### Sustainable Materials

LG Chem conducts various sustainability businesses centered on eco-friendly materials in the fields of bio, recycling, and energy transition.

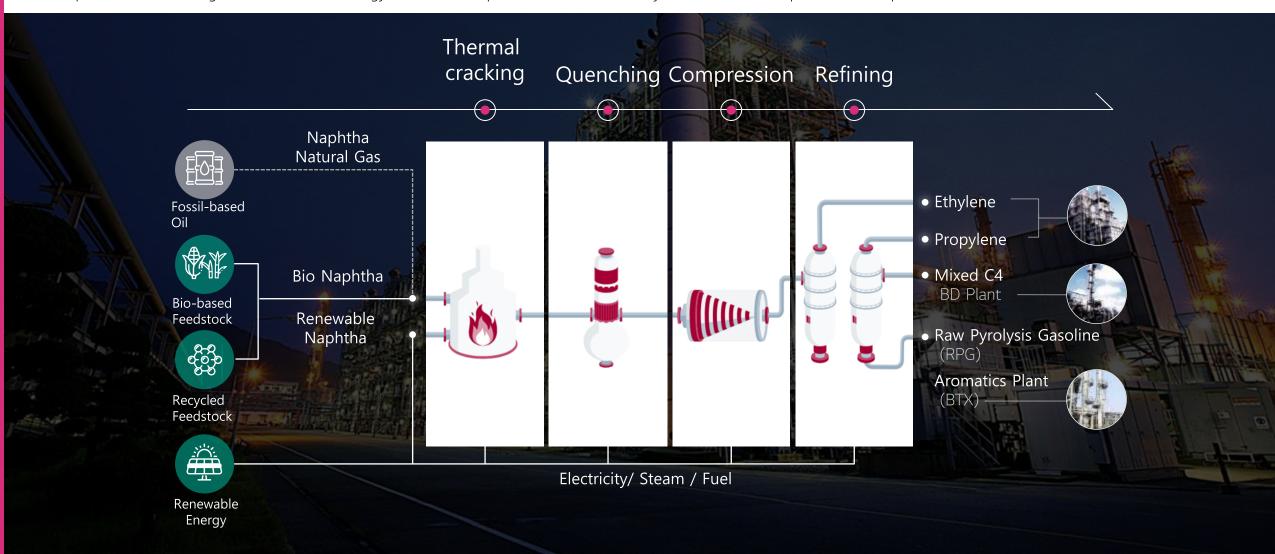
We also present innovative sustainability solutions to our customers and contribute to the creation of future value through our eco-friendly material brand LETZero, which embodies our determination to achieve net zero carbon emissions and damage to the environment.



#### Naphtha Cracking Center (NCC)

NCC (Naphtha Cracking Center) is a process for producing base oils for petrochemical products, such as ethylene and propylene. They are supplied as raw materials for various products such as PO, synthetic rubber, and ABS.

LG Chem discovers and supplies alternative raw materials such as bio-materials and pyrolysis oil from waste plastic to reduce carbon, and develops various technologies for renewable energy and carbon capture for the eco-friendly conversion of our petrochemical plants.



#### Polyolefin (PO)

PE and PP, which are general-purpose plastics widely used in daily life, are used as main raw materials for product containers, packaging, and medical equipment. LG Chem provides eco-friendly PO material solutions with BCB (Bio Circular Balanced) products utilizing bio-based raw materials. Additionally, discarded products after use are produced into PCR PE and PCR PP through mechanical recycling technology and used for secondary packaging films and containers, or produced into CB (Circular Balanced) products with quality equivalent to new materials through chemical recycling technology.

and exterior parts



#### **PVC/Plasticizers**

PVC (Polyvinyl Chloride) is highly durable and has excellent insulation performance, making it suitable for processing with plasticizers to provide flexibility. It is used in various building materials and household products such as flooring, windows, and artificial leather. LG Chem leads the eco-friendly trend with BCB (Bio-Circular Balanced) products using bio-based raw materials, PCR PVC through recycling technology, and recycled plasticizers based on waste PET. Additionally, LG Chem produces caustic soda, which is widely used in advanced industries such as cathode manufacturing, and PC (Polycarbonate), known for its impact resistance and heat resistance, providing solutions for various fields.

PVC, Plasticizers Caustic soda, Alcohol, PC







Applications



Sashes



Flooring



Pipes



EV Charging cable



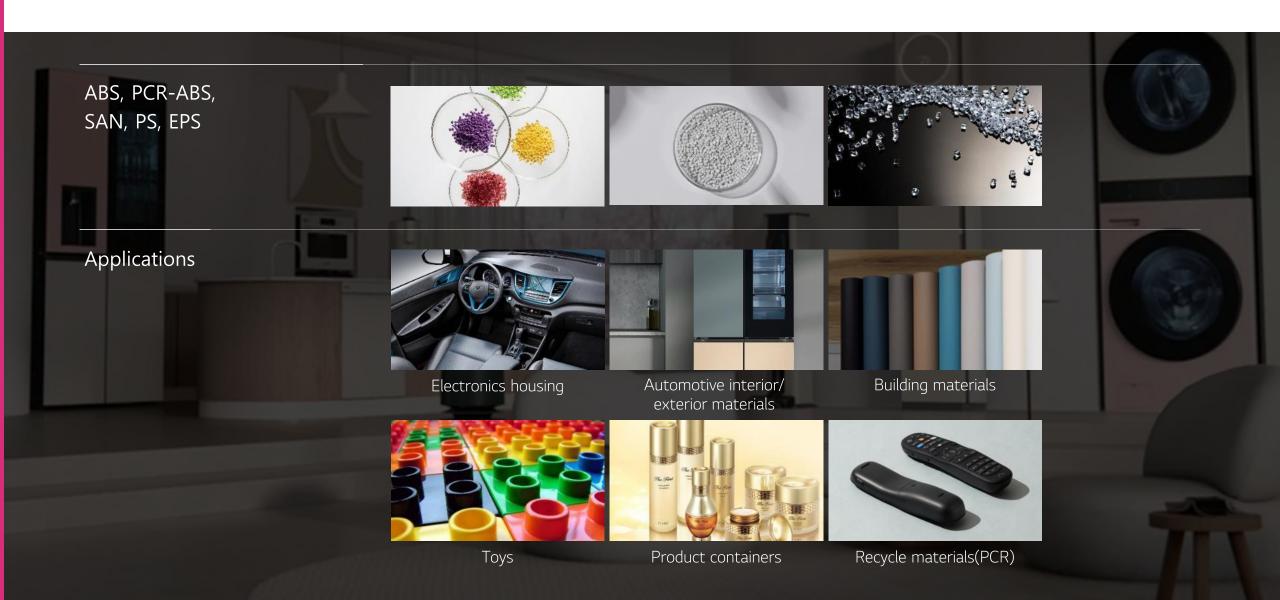
Interior Car sheet



Car headlamps

#### Acrylonitrile Butadiene Styrene (ABS)

Acrylonitrile Butadiene Styrene (ABS) is a highly functional material mainly used in automobiles, home appliances, and IT devices for its excellent heat resistance, shock absorbance, and processability. LG Chem provides differentiated solutions to our customers, from producing chemical industry's very first white-colored PCR ABS and Asia's first eco-friendly BCB(Bio-Circular Balanced)ABS made of plant-based materials.



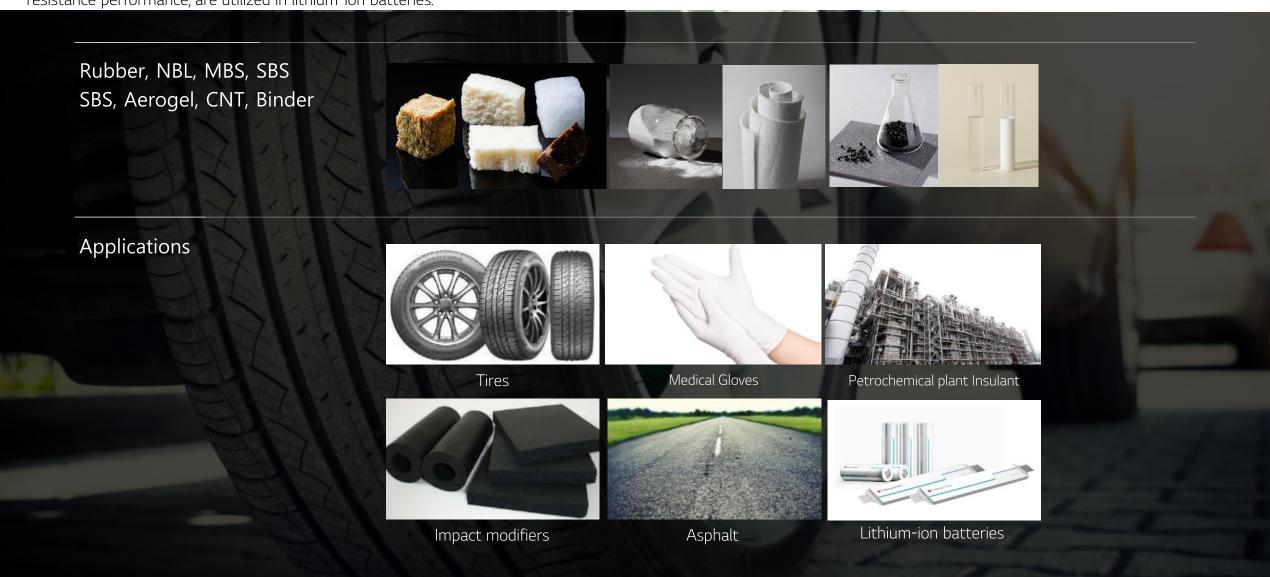
#### Acrylates / SAP(Super Absorbent Polymer)

LG Chem is the only manufacturer of acrylic acid, IPA, and NPG in Korea, and produces high-quality products based on proprietary technology. Mainly used in paints, plasticizers, and SAP, Acrylates, Acrylic Acid have a myriad of applications in various fields for its excellent chemical reactions. Additionally, the super absorbent polymer (SAP), used in diapers and hygiene products, has applied plant-based raw materials and obtained the world's first ISCC+ international certification, providing it to customer.



#### High Performance Materials (HPM)

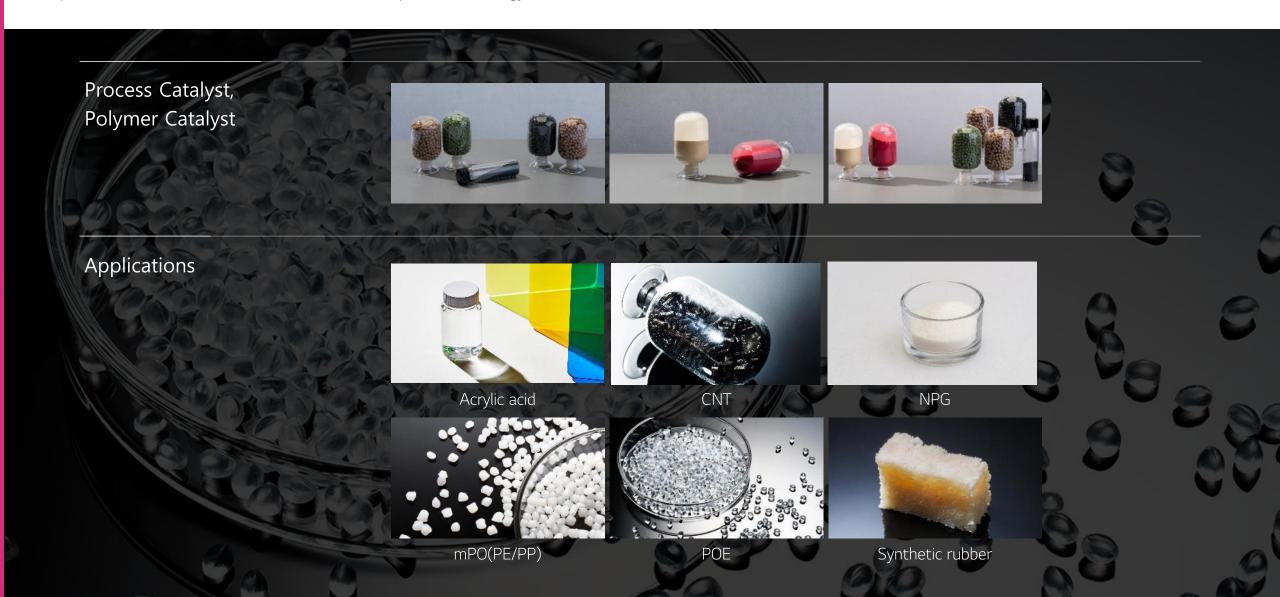
LG Chem's high-performance materials (HPM) provide various solutions to customers. Synthetic rubber is used as a raw material for tires and golf balls, and NBR latex is used for medical and industrial gloves, recognized for its excellent tensile strength and chemical resistance. MBS is used to enhance adhesion between other resins in impact modifiers and bio-plastic compounds, while SBS is used as a special additive for asphalt modifiers to impart various functions. Aerogel, with its high insulation and durability properties, is used for industrial insulation applications and battery thermal barriers. CNT, with high conductivity and dispersibility, and anode binders, with excellent adhesion and resistance performance, are utilized in lithium-ion batteries.



#### Catalyst

Catalysts are the core technology for various petrochemical processes. We are the Korea's first and world's fourth company to independently develop catalysts for acrylic acid production. Polymer catalysts are used to manufacture metallocene polyolefins and functional chemical materials.

We provide tailored solutions to customers with exceptional technology.



02

Introduction of LG Chem

Advanced Materials Company



#### Advanced Materials Company

Establishment (year)

1999

**Sales** (₩)\* As of 2024

6.4trn (Approx.)

Workforce (Person)

Domestic 4,030 / Overseas 1,862

#### **Business Area**

Battery Materials, Engineering Materials, Electronic Materials, Water Solutions

• 2	024	Signed a 25 trillion KRW supply contract for cathode materials with GN and expanded the RO membrane 3rd production line.
• 2	023	Started construction of Cathode Material Plant (in Tennessee)
• 2	2022	Established a cathode material joint venture LG-HY BCM (in Gumi) Established a separator joint venture LG-Toray (in Hungary)
• 2	2021	Commercialized battery separators (Acquired separator business from LG Electronics)
• 2	2019	Reorganized Advanced Materials Company (to provide customized solutions in high-performance materials)
• 2	2018	Established Chinese joint venture for manufacturing Precursor and cathode material
• 2	2016	Acquired GS E&M, a renowned cathode manufacturer
• 2	2006	Commercialization of battery materials (cathode material, electrolyte)
• 2	2003	Established IT&E Manufacturing Subsidiary in Nanjing, China
	2000 ~ 2004	Commercialized LCD, OLED, Process materials
• 2	2000	First to develop PDP fluorescent substance in Korea.

## Towards World's Top Comprehensive Battery Materials Company



#### Global Top Tier Cathode Materials

- Develop leadership in high capacity and cost-innovative technology
- Expansion of business sites worldwide
- Strengthening metal competitiveness, including recycling





# Capacity building of separator business

- Development of next-generation highsafety separators
- Expand a global production base in Poland (2021) and Hungary (2022)



# Upgrading the battery Materials portfolio

 Expanding business in higher valueadded battery materials



# Increased investment in R&D

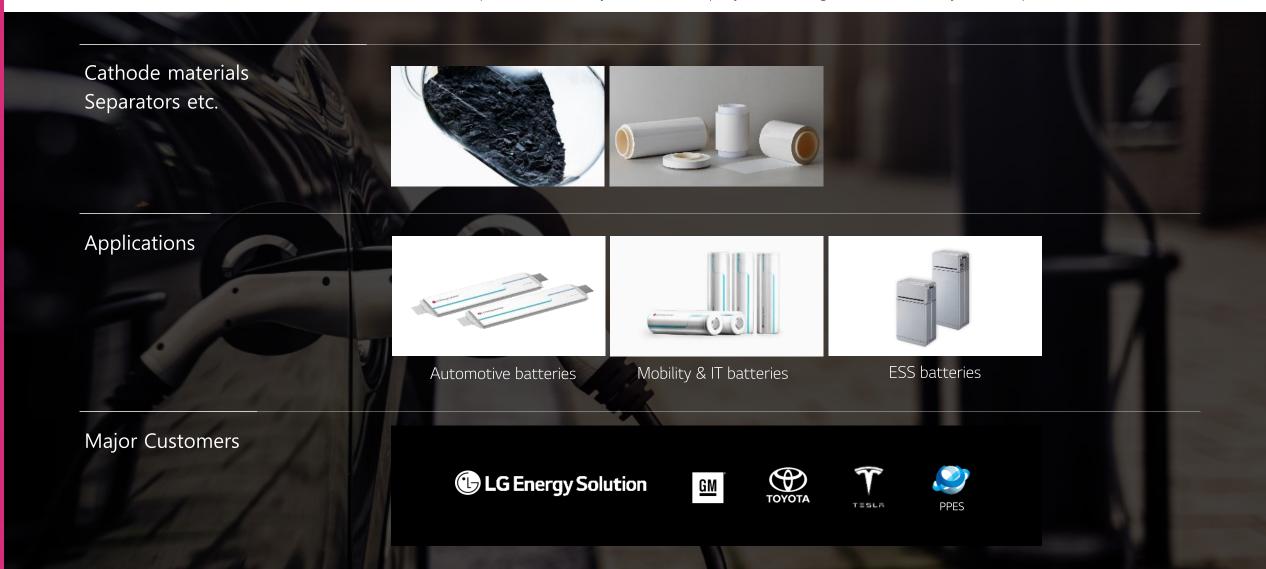
Differentiate technology and gain market leadership



#### **Battery Materials**

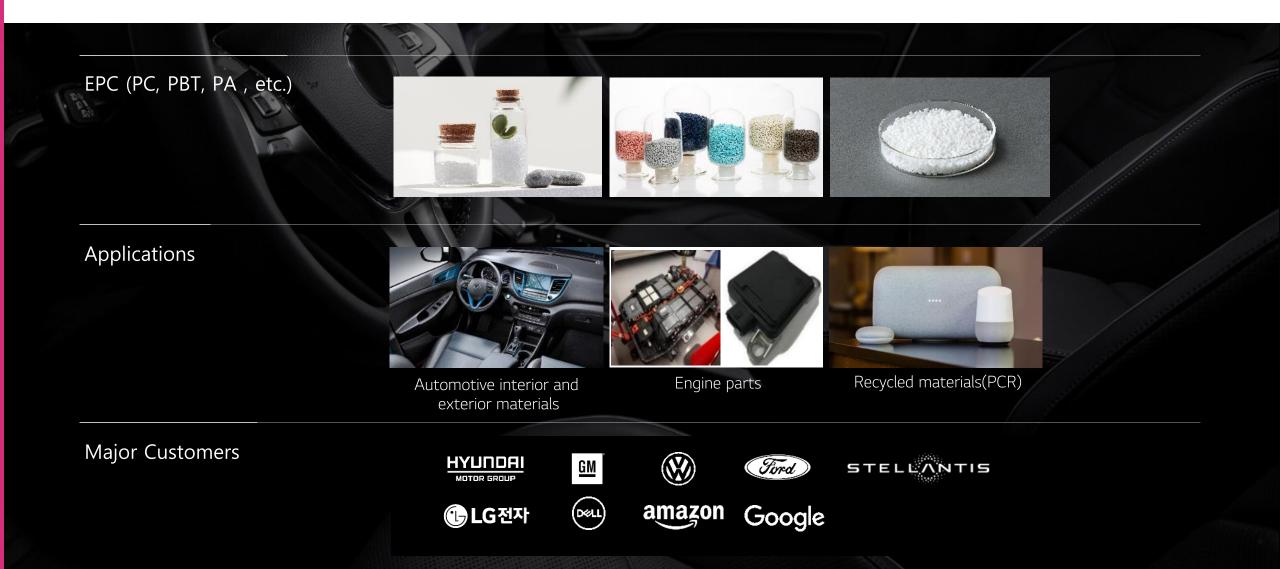
In addition to cathode binders and dispersants, LG Chem is producing over 10 types of battery materials, including cathode materials and separators, which are core materials for secondary batteries.

We are also bolstering R&D across a wide range of fields, such as developing new materials for the technological advances in the next-generation batteries. LG Chem will continue to strive to become the world's No. 1 comprehensive battery materials company with the highest level of safety and competitiveness.



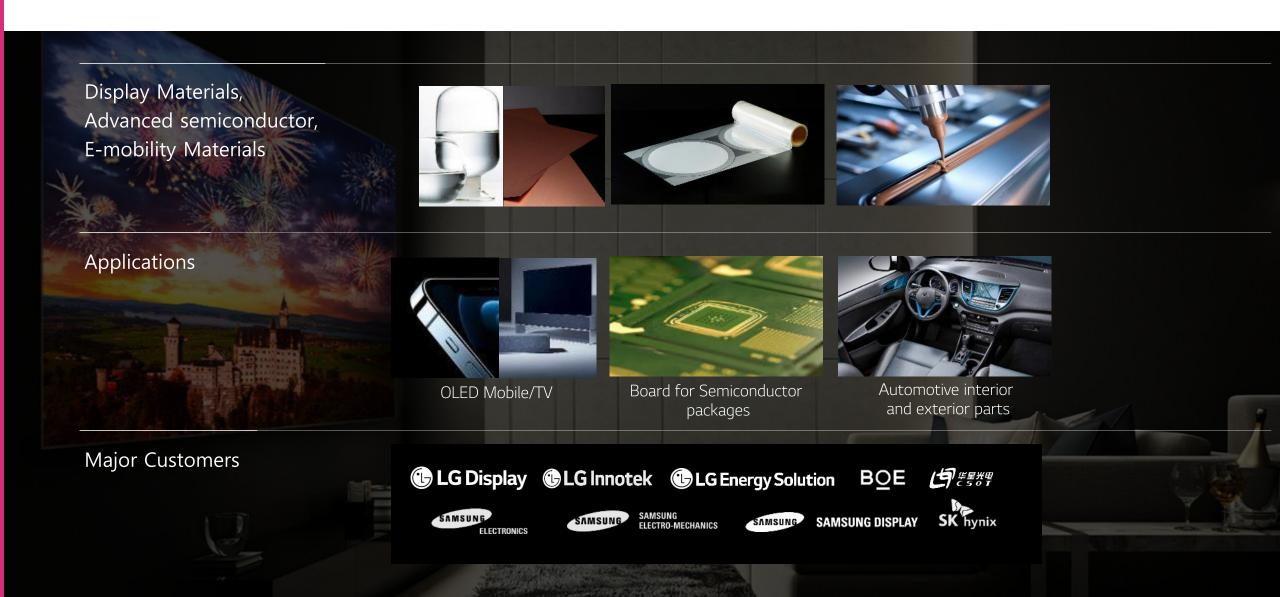
#### **Engineering materials**

In mega trends such as e-mobility and sustainability, LG Chem is striving to create world no. 1 products by producing high-strength, lightweight automotive materials and eco-friendly PCR materials that are optimized for customer products and processes.



#### **Electronic Materials**

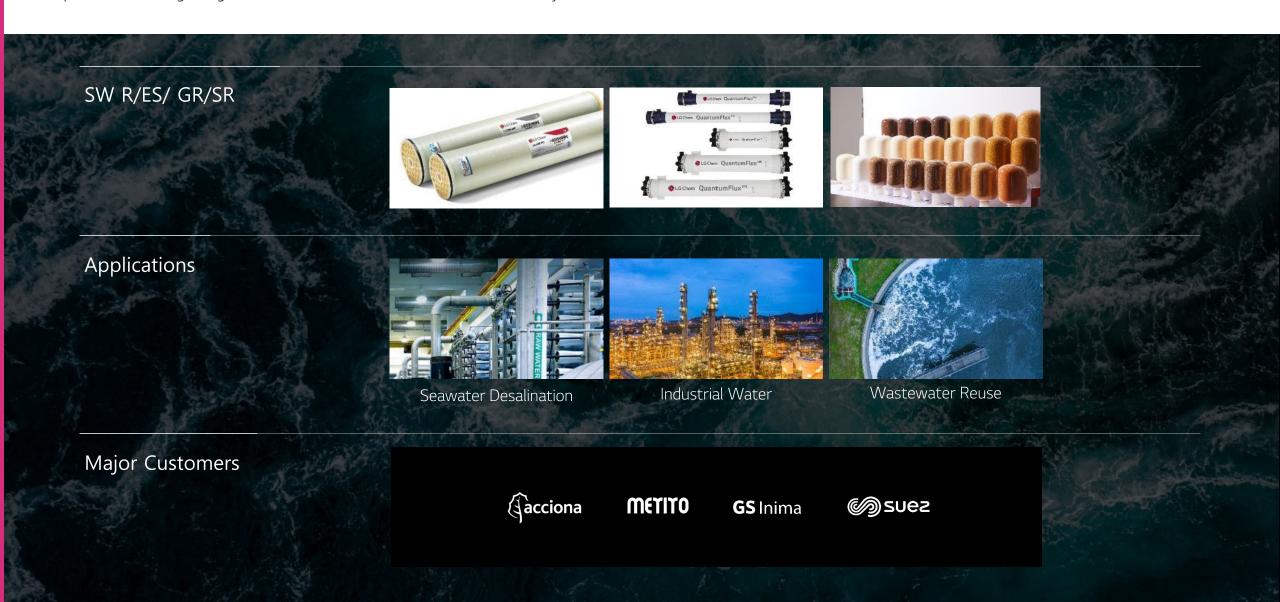
LG Chem produces light-emitting materials for OLEDs and semiconductor back-end process materials, which are key materials for IT devices. We are also working to accelerate the growth of our electronic film and adhesive products used in e-mobility.



#### **Water Solutions**

LG Chem's seawater desalination and industrial RO Membrane is a water treatment filter that utilizes our proprietary Thin-Film Nanocomposite (TFN) nanotechnology.

This product is leading the global market with an unrivaled removal efficiency of 99.89%.



03

Introduction of LG Chem ————

Life Sciences Company



#### Life Sciences Company

Establishment (Year)

1984

Sales (₩) \*As of 2024

1.3trn (Approx.)

Workforce (Person)

Domestic 1,916 / Overseas 371

**Business Area** 

Pharmaceuticals, Vaccines, Aesthetic

• 2024	Export of new drug technology for rare obesity treatment (to Rhythm Pharmaceuticals in the USA).
2023	Acquired AVEO, a US-based cancer drug company
• 2022	Applied for global Phase III clinical trial for Tigulixostat (new drug for gout) in the US
• 2021	Established LG Jiansheng Life Science in China
	Successfully completed Phase II clinical trial for new gout drug in the US
• 2019	Established Life Sciences Innovation Center in Boston, US (Now LG Chem Life science USA, Inc.)
• 2012	Developed 1st Korean diabetes medicine, 'Zemiglo'
• 2003	1st Korean new chemical entity (NCE) approved by U.S. FDA (Factive)
• 1996	1st Korean hepatitis B vaccine 'Euvax' approved by WHO PQ
• 1991	Developed World's first 4 <sup>th</sup> generation Cephalosporin
• 1984	Start of pharmaceutical business (Established Pharmaceuticals business division)
• 1961	Acquire of manufacturing license pharmaceuticals products

## Toward a World-Class Innovative Drug Developer



5 or more innovative new drugs by 2030

- Enhanced the quality of new drug pipeline
- Invest over USD 250mil in annual R&D
- Strengthening of Open innovation



Diabetes, metabolic diseases, cancer, autoimmune diseases

Expand new drug pipelines





Accelerate clinical developments and business growth worldwide

- New tasks for global clinical development
- Continued growth of AVEO's oncology business in the US

#### Primary Care

LG Chem has developed Korea's first diabetes drug, Zemiglo, and arthritis drug, Synovian, increasing its competitiveness in Korea as well as overseas, and has expanded its efforts to develop new drugs and to collaborate with other companies through partnerships in the areas of diabetes and cardiovascular, musculoskeletal, and autoimmune diseases.



#### **Specialty Care**

LG Chem is the first company in Korea that has successfully developed a growth hormone stimulator, and is also concentrating its R&D capabilities on treatments for special diseases.

LG Chem has been strengthening competitiveness in the global market with its WHO-approved hepatitis B and pentavalent combination (5-in-1) vaccine.



#### Aesthetic

YVOIRE, the first hyaluronic acid filler developed with LG Chem's proprietary technology in Korea, is receiving attention for its superior product quality leading to expanding market share.



#### **AVEO Oncology**



AVEO Oncology, acquired by LG Chem in 2023, is an oncology-focused biopharmaceutical company based in Boston, U.S.

Approved by U.S. FDA in 2021, AVEO is expanding its Kidney cancer drug(Fotivda®) sales, and is accelerating pipeline development including Head and Neck cancer drug. Through AVEO Oncology, LG Chem aims to strengthen competitive edge in U.S. market for New drugs and become a global leading Oncology company.

## Representative Product



Kidney Cancer Drug FOTIVDA®

#### Pipeline

Projects	Indications	Stage
FIERCE-HN	Head and Neck Cancer	Phase III
AV-380	Solid Tumor	Phase I
TiNivo-2	Kidney Cancer	Phase III



# THANK YOU

#### We Connect Science



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