

## INDUSTRY OVERVIEW

*The information and statistics set out in this section and other sections of this document were extracted from the Frost & Sullivan Report, a commissioned report from Frost & Sullivan. We engaged Frost & Sullivan to prepare the Frost & Sullivan Report, an independent industry report, in connection with the [REDACTED]. We believe that the sources of the information in this section and other sections of this document are appropriate sources for such information, and we have taken reasonable care in extracting and reproducing such information. The information from official government sources has not been independently verified by us, the Joint Sponsors, [REDACTED], [REDACTED], [REDACTED], [REDACTED], any of their respective directors and advisers, or any other persons or parties involved in the [REDACTED], and no representation is given as to its accuracy. Accordingly, the information contained herein may not be accurate and should not be unduly relied upon.*

### SOURCES OF INFORMATION

We commissioned Frost & Sullivan, an independent consulting firm, to conduct a detailed research on the ADC and broader bioconjugate markets and the outsourcing services industry. Frost & Sullivan is an independent global market research and consulting company which was founded in 1961 and is based in the United States. Services provided by Frost & Sullivan include market assessments, competitive benchmarking, and strategic and market planning for a variety of industries. We have agreed to pay a fee of RMB550,000 to Frost & Sullivan in connection with the preparation of the Frost & Sullivan Report. We have extracted certain information from the Frost & Sullivan Report in this section, as well as in the sections headed “Summary,” “Risk Factors,” “Business,” “Financial Information” and elsewhere in this document to provide our potential [REDACTED] with a more comprehensive presentation of the industry in which we operate.

During the preparation of the Frost & Sullivan Report, Frost & Sullivan performed both primary and secondary research, and obtained knowledge, statistics, information and industry insights on the industry trends of the global ADC and broader bioconjugate markets and the global ADC outsourcing services market, as well as major players in the ADC outsourcing services industry. Primary research involved discussing the status of the industry with leading industry participants and industry experts. Secondary research involved reviewing annual reports of public companies, independent research reports and Frost & Sullivan’s proprietary databases. The Frost & Sullivan Report was compiled based on the assumptions that (i) the global economies, in particular, the United States and China, are likely to maintain a steady rate of growth in the next decade; (ii) the key growth drivers mentioned in this section are likely to drive the growth of the global ADC and broader bioconjugate markets and the ADC outsourcing market from 2022 to 2030, and (iii) there is no force majeure or industry regulation that affects any of such markets dramatically or fundamentally. For the avoidance of doubt, the impacts of COVID-19 have been considered when compiling information in the Frost & Sullivan Report. In this section, Frost & Sullivan presents historical market information for five years (i.e., from 2018 to 2022) which is longer than the Track Record Period and, we believe, is a more accurate reflection of the trends that affect our markets.

Our Directors confirmed that, after taking reasonable care, as of the Latest Practicable Date, there had been no adverse change in the market information set forth herein since the date on which the Frost & Sullivan Report was issued.

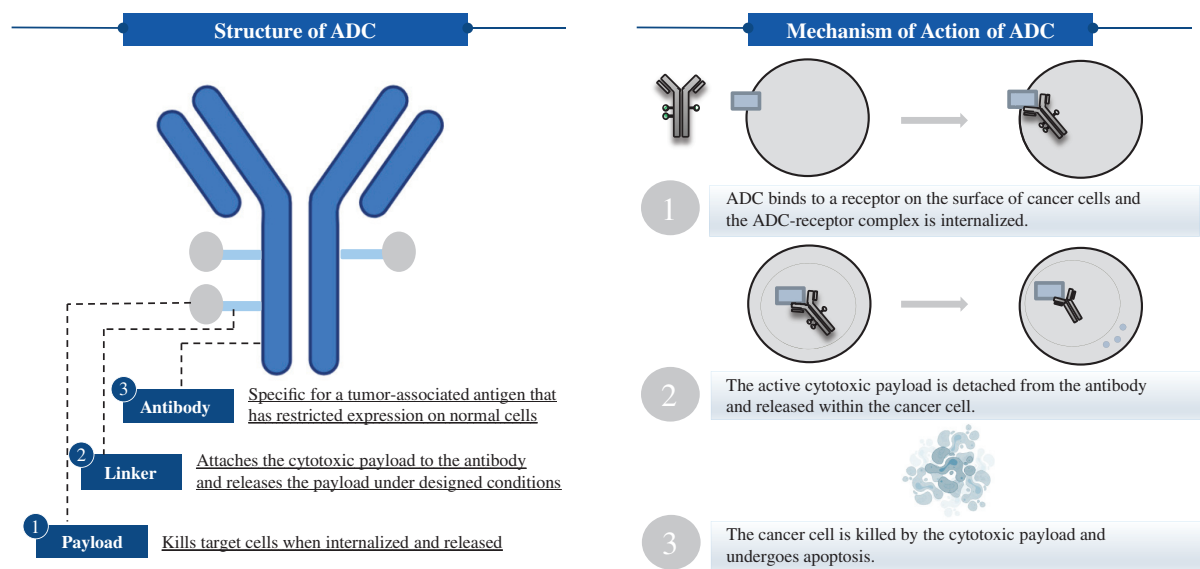
## INDUSTRY OVERVIEW

### OVERVIEW OF ADC AND BROADER BIOCONJUGATE MARKETS

#### Antibody Drug Conjugates (“ADCs”)

ADC is an innovative biologics drug modality composed of a biologic component (i.e., the antibody) attached to a small molecule drug (i.e., the cytotoxic payload) via a specifically designed linker. A traditional ADC drug utilizes the antibody to bind to the tumor-specific antigen, delivers the payload to the target cancer cell, and then releases the payload to cause cancer cell death. An ADC combines the target selective antibody and highly active cell-killing toxic drug, and has demonstrated the potential of significantly improving therapeutic window compared to current standard-of-care therapies.

The following diagram illustrates an ADC’s structure and its mechanism of action (“MoA”).



Source: Frost & Sullivan Report

Two categories of payloads are frequently utilized among the marketed ADCs: (1) tubulin inhibitors, and (2) DNA damaging agents. With respect to antibodies, the IgG antibody stands as the most widely utilized antibody. When it comes to conjugation methods, there are typically two options commonly used: (i) leveraging stochastic conjugation by targeting existing lysine or cysteine residues through suitable coupling reactions, and (ii) employing site-specific conjugation strategies.

## INDUSTRY OVERVIEW

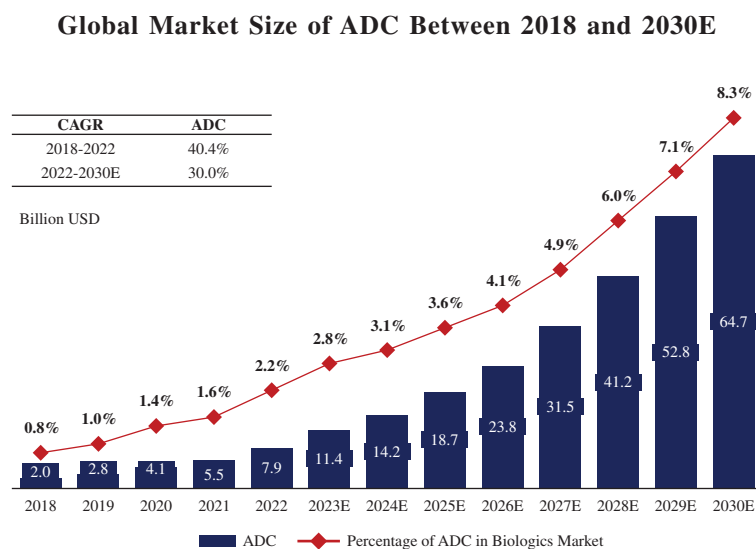
### Overview of Global ADC Market

Following the FDA’s approval of the first ADC, Mylotarg® (gemtuzumab ozogamicin), in 2000, both academic and industrial sectors have dedicated decades of effort towards the development of ADC therapies. In recent years, there have been significant advancements in ADC drug development, such as the emergence of new conjugation technology, optimization of drug-to-antibody ratios (DARs), and improved linker design. Consequently, the field has seen an acceleration in development, leading to an era of explosive growth. For the period from 2019 to 2022, ADCs represent approximately 15.4% of biologics approved by the FDA, according to Frost & Sullivan.

As of the Latest Practicable Date, 15 ADC drugs had received approval worldwide, out of which 11 had been approved since 2018 and 4 have been approved since 2021. Several of these drugs have shown promising clinical benefits and have the potential to become blockbusters. For instance, Enhertu, a groundbreaking treatment for HER2+ cancers, generated revenue exceeding US\$200 million in 2020, its first year on the market after its commercial launch in December 2019. In 2022, three third-generation ADCs generated significant annual sales. Enhertu sales surpassed US\$1.2 billion, Padcev sales reached over US\$750 million, and Trodelvy sales amounted to approximately US\$680 million. These impressive sales figures were achieved in their third year after launch. In addition, 15 to 57 ADC drug candidates have entered clinical trials annually since 2018. As of March 31, 2023, there were over 500 ongoing clinical trials globally, involving 222 ADC drug candidates, among which, 130, 75, and 17 are currently undergoing phases I, II and III clinical trials, respectively. The flourishing clinical development of ADC drugs has led to the publication of over 100 abstracts related to ADCs at the 2023 American Society of Clinical Oncology (“ASCO”) Annual Meeting.

Global ADC market is poised for substantial growth over the next decade. The global ADC market in 2022 has grown to US\$7.9 billion with a CAGR of 40.4% between 2018 and 2022, and is expected to further grow to US\$64.7 billion in 2030 at a CAGR of 30.0% between 2022 and 2030, according to Frost & Sullivan. The share of ADC drugs in the overall biologics market is expected to increase from 2.2% in 2022 to 8.3% in 2030, according to the same source.

The following chart sets forth global market size of ADC and its percentage of overall biologics for the period between 2018 and 2030:

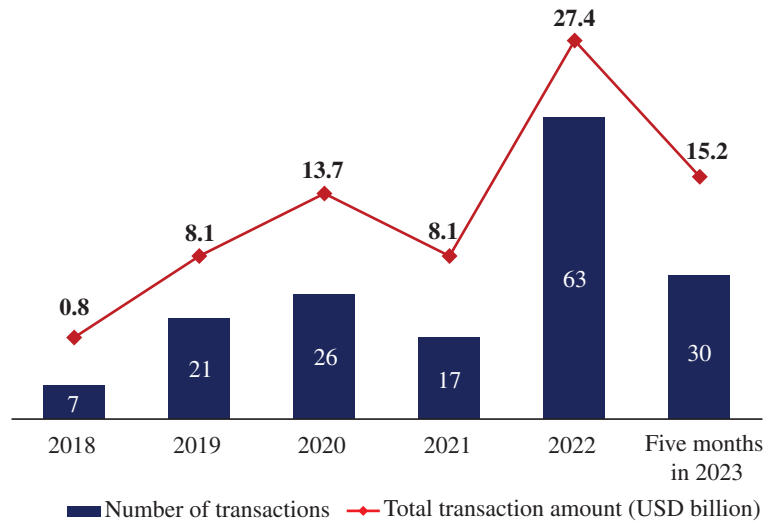


Source: Frost & Sullivan Report

## INDUSTRY OVERVIEW

Furthermore, the commercial potential of ADCs and other bioconjugate drugs has been evidenced by significant acquisition and licensing activities globally. According to Frost & Sullivan, over 100 deals involving ADCs have taken place since 2022. These include the recent acquisition of Seagen, a leading biotech company specializing in developing ADCs for cancer treatment, by Pfizer, for a total consideration of approximately US\$43 billion. The surge in licensing deals for ADCs is driven by the current wave of transformative advancements in ADC development. In 2022, there were a total of 63 ADC licensing deals worldwide, representing a 270% increase compared to the previous year. The chart below illustrates the number of global ADC licensing deals over the past five years.

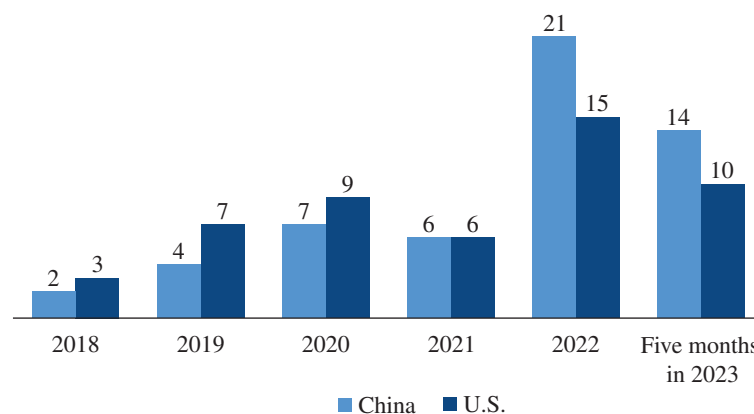
**Global ADC Licensing Deals from 2018 to 5M2023**



Source: Frost & Sullivan Report

China has emerged as the frontrunner in ADC development, occupying a prominent position in the global market. According to Frost & Sullivan, China has been the primary contributor to ADC out-licensing deals in recent years, with 35 deals between 2022 and May 2023, whereas the United States has contributed 25 deals in the same period. The chart below illustrates the number of ADC out-licensing deals from China and the U.S. over the past five years.

**ADC Out-Licensing Deals from China and the U.S. from 2018 to 5M2023**



Source: Frost & Sullivan Report

## INDUSTRY OVERVIEW

According to Frost & Sullivan, since 2022 and as of the Latest Practicable Date, there had been 10 China pharmaceutical and biotechnology companies that reached 14 ADC out-licensing deals with overseas partners, totaling US\$22.0 billion. Of these 10 China companies, eight of them are clients of our Company. The following table sets forth out-licensed ADC deals by China-based biotechnology companies with overseas partners since 2022 and as of the Latest Practicable Date.

### China Out-licensing ADC Deals with Overseas Partners since 2022

Number	Licensor	Licensee	Asset	Transaction Amount (billion USD)	Date
1	Kelun Biotech	MSD	7 ADCs	9.5	2022.12
2	Bliss Bio	Eisai	BB-1701	2.0	2023.5
3	Duality Biologics	BioNTech	2 ADCs	1.7	2023.4
4	Kelun Biotech	MSD	SKB-264	1.4	2022.5
5	CSPC Megalith Biopharmaceutical	Elevation Oncology	SYSA1801	1.2	2022.7
6	KYM Biosciences	AstraZeneca	CMG901	1.2	2023.2
7	LaNova Medicines	Turning Point	LM-302	1.0	2022.5
8	GeneQuantum	Pyramid Biosciences	GQ1010	1.0	2023.4
9	Kelun Biotech	MSD	SKB-315	0.9	2022.7
10	Evopoint Biosciences	AmMax	AMB-05X	0.9	2023.1
11	CSPC	Corbus	Nectin-4 ADC	0.7	2023.2
12	LaNova Medicines	AstraZeneca	LM-305	0.6	2023.5
13	Multitude Therapeutics	OnCusp Therapeutics	Highly differentiated ADC targeting CDH6	NA	2022.6
14	Biocytogen	ADC therapeutics	3 mAb/BsAb molecules against tumor targets for ADC development	NA	2022.11
<b>Total Transaction Amount (Billion USD)</b>				<b>22.0</b>	

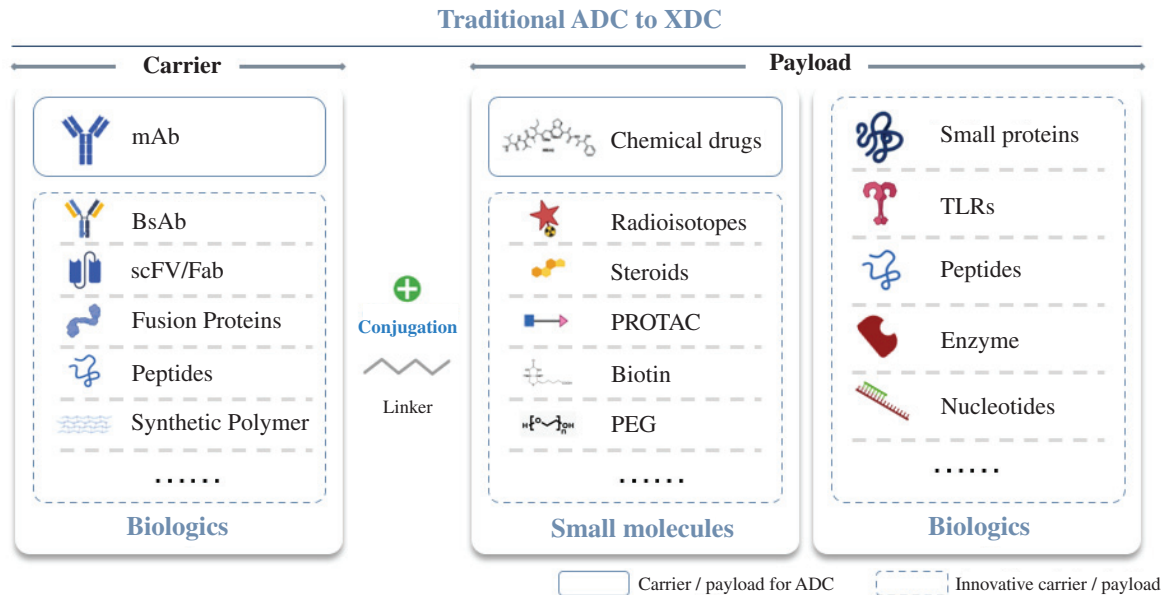
*Source: Frost & Sullivan Report*

### Broader bioconjugates — from ADCs to XDCs

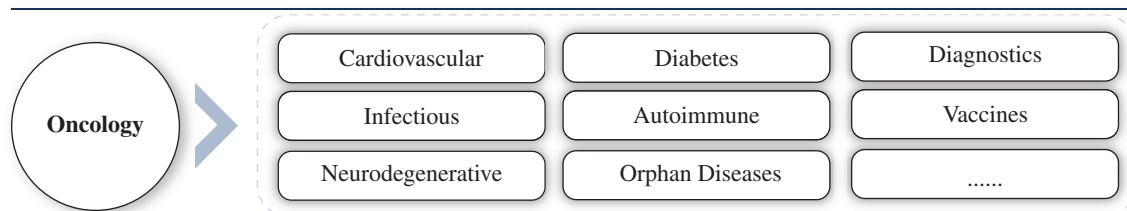
Ongoing research and development endeavors continually explore novel variations in payloads, linkers, antibodies (or alternative carrier categories), and conjugation methods. These efforts have generated a wide range of potential bioconjugates, providing diversified treatment options for various therapeutic applications.

## INDUSTRY OVERVIEW

Bioconjugates are extending beyond ADC by first conjugating various payloads other than chemical drugs with antibody, and then further to conjugate various carriers other than antibody with various payloads (“XDC”). The following chart illustrates transition from traditional ADCs to broader bioconjugates and application expansion.



### Indications Beyond Oncology



Source: Literature Review, Frost & Sullivan Analysis

Beyond the traditional cytotoxins, more than seven different types of payloads with novel mechanisms are currently being incorporated into ADC designs. Notably, radionuclide drug conjugates (“RDC”), or radioligand therapy, utilize radioisotopes to emit therapeutic radiation, causing damage to cells, while the target ligand selectively binds to specific markers on target cells. RDCs have demonstrated notable advantages in targeting specificity across various indications and a number of RDCs have achieved strong commercial performance. Novartis has made significant investments in RDC space, with two approved therapeutic RDCs. Pluvicto was approved in 2022 and achieved sales of US\$271 million in its first year of launch. In March 2023, Novartis invested US\$1.7 billion in Bicycle for collaboration in novel RDC candidates, further emphasizing the significance of RDCs in the pharmaceutical industry.

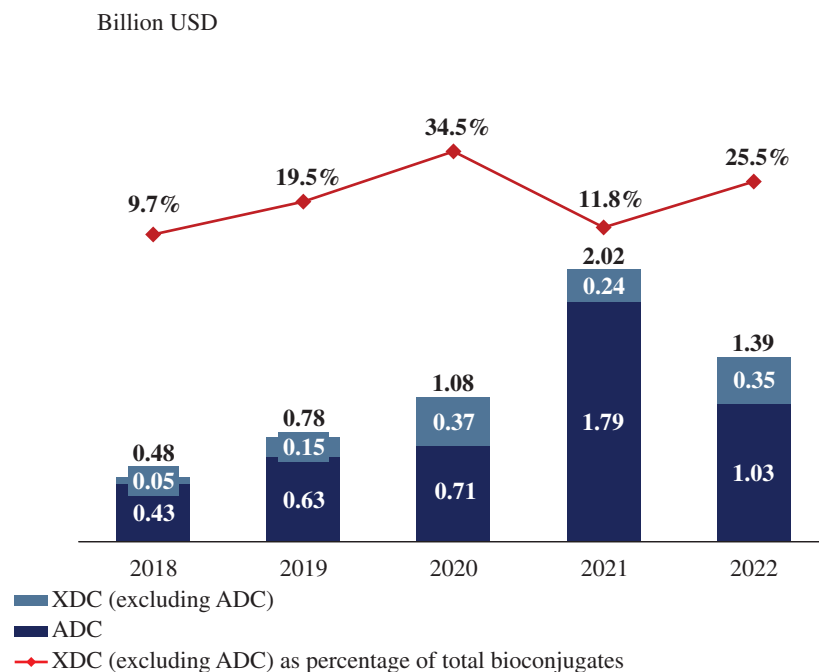
The IgG antibody stands as the most widely utilized antibody, although researchers are actively working on reducing its size by eliminating the Fc segment. The advancement of bispecific antibody technology has opened up new possibilities for innovation in ADCs. In addition to antibodies, alternative molecules such as peptides, fusion proteins, and synthetic polymers are being investigated as potential

## INDUSTRY OVERVIEW

carriers. Peptide-drug conjugates (“PDCs”) have emerged as the next generation of targeted therapeutics following ADCs, offering enhanced cell permeability, improved efficacy and reduced off-target toxicity. Lutathera, the peptide conjugated to a radioisotope developed by Novartis, received FDA approval in 2018 and achieved sales of US\$471 million in 2022.

With the continuous advancements in technology development, XDCs including PDC, RDC, antibody-oligonucleotide conjugates (“AOC”), antiviral Fc conjugates and nanoparticle conjugates, etc. have seen increasing investment in global R&D activities. The following chart shows the global private market financings for XDCs in addition to ADCs in recent years.

**Global Private Market Financings for ADCs and XDCs Between 2018 and 2022**



Source: Frost & Sullivan Report

As conjugation technologies continue to advance, there is also a growing exploration of carriers beyond mAb and payloads beyond small molecular drugs. These broader drug conjugates have the potential to target various aspects of treatment of cancer as well as other therapeutic areas. This diversification further enhances the market potential and contributes to the sustained growth of the industry.

As of the end of May 2023, there are 134 XDC products (excluding ADCs) undergoing clinical trials worldwide. Among them, 64 are in Phase II, while 56 are in Phase I and 14 are in Phase III, according to Frost & Sullivan. A significant number of XDC products in clinical development are focused on emerging targets, showcasing the considerable potential of XDCs in offering expanded treatment options. It is anticipated that 17 XDCs (excluding ADCs) will receive approval within the next five years, according to Frost & Sullivan.

---

## INDUSTRY OVERVIEW

---

### *Major trends and growth driver of global ADC market*

ADC technology has evolved significantly since the development of the first-generation ADCs. The introduction of site-specific conjugation technology has contributed significantly to the third generation of ADCs. This advancement has allowed the production of homogenous ADCs with well-defined DARs. As a result, these ADCs exhibit the desired cytotoxicity and reduce off-target toxicity. Furthermore, the use of fully humanized antibodies, as opposed to chimeric antibodies, in the third generation helps mitigate immunogenicity concerns. This switch to fully humanized antibodies enhances the overall safety and effectiveness of ADCs. Highly potent payloads are adopted in the third generation ADCs, which further improve efficacy. Additionally, ADCs with homogenous DARs offer improved pharmacokinetics, ensuring optimal drug delivery and distribution throughout the body.

The global ADC market will continue to advance driven by the following factors:

- ***Advances in ADC design and conjugation strategies*** — Continued research in ADC technology and cancer biology is anticipated to fuel the exploration of innovative targets, payload molecules, linker designs, and conjugation strategies. This pursuit holds the potential to develop new ADC designs that enhance therapeutic efficacy and address toxicity concerns associated with existing ADCs available in the market.
- ***Expansion of applications and treatment lines*** — The progress in ADC technologies is projected to lead to a wider array of potential targets and applications, extending beyond oncology to include other therapeutic areas. It is anticipated that around 30 ADCs will receive approval within the next five years globally, covering applications such as cancers, autoimmune diseases, diabetes, cardiovascular diseases, and genetic diseases. ADCs are also expected to enter earlier treatment lines and expand into the early stages of cancers.
- ***Combination with other treatment modalities*** — The mechanisms of action of ADCs have the potential to synergize with other treatment modalities, resulting in enhanced tumor cell eradication. Therefore, ADC is being actively studied in preclinical activities and clinical trials in combination with other anticancer agents including chemotherapy, molecularly targeted drugs, and immunotherapy in recent years. With the extensive efforts currently underway, it is believed that the ADC-based combination therapy holds promising prospects in the future. For example, the combination of ADC and immunotherapy has the potential to become the primary approach in immunotherapy. Nearly half of the current combination therapies involving immunotherapy and chemotherapy could be replaced by immunotherapy combined with ADC, according to Frost & Sullivan.



---

## INDUSTRY OVERVIEW

---

### *Challenges in ADC Discovery and Development Process*

The discovery, development and manufacturing of ADC require an interdisciplinary expertise in both biologics and small molecule compounds, as well as a deep understanding of complex supply chain management.

Key challenges in ADC discovery, development, and manufacturing process involve but not limited to following and oftentimes are intertwined:

- ***Challenging ADC design and discovery conjugation scenarios*** — Achieving success in discovering and generating stable antibodies and payload-linkers of high purity demands interdisciplinary expertise. When venturing into conjugation discovery, it becomes crucial to extensively explore different conjugation methods, especially when working with less stable antibodies or highly hydrophobic payload-linkers. Additionally, a considerable level of expertise is required to align specific desired profiles, such as the desired DAR and drug load distribution. Furthermore, versatile analytical characterization methods are essential due to the involvement of diverse molecule types in each study.
- ***Developability assessment for seamless transition to CMC*** — When considering novel biologics as a modality, it becomes crucial to conduct a developability assessment to validate the selection of a lead candidate for subsequent preclinical studies. Before progressing to the CMC process, a substantial amount of time and resources may be required to verify the conjugability and stability of the lead molecule through thorough physicochemical and developability assessments.
- ***Complexity on conjugation process optimization and formulation development*** — Parameters such as DAR and heterogeneity (drug load distribution) are key in the conjugation process development, as they directly influence the stability and quality of the bioconjugates. The formulation development process becomes intricate as it involves the formulation of both the antibody intermediate and ADC drug substance and drug products. This necessitates the adoption of complex analytical method development and product characterization, which often requires double the effort compared to working solely with antibodies. Achieving proficiency in process development, formulation development, and analytical method development demands a high level of expertise. Ensuring process efficiency and consistency is also of utmost importance in this context.
- ***Handling of high potent compounds*** — The requirement for specialized facilities, experienced staff, and substantial investments in environmental health and safety (“EHS”) compliance in handling highly potent compounds during the development and manufacturing process result in high outsourcing demand, because few companies possess these capabilities in-house.
- ***Complex supply chain management*** — To produce various components of ADCs and manage the manufacturing of ADC drug substances and final drug products, multiple manufacturing facilities for both biologics and small molecule drugs are typically required. The complexity of the supply chain management requires in-depth execution expertise and all-rounded facilities. The geographical proximity of these facilities becomes a significant distinguishing factor, as it enables better quality assurance and cost efficiency by minimizing logistical challenges.

---

## INDUSTRY OVERVIEW

---

- **Multiple outsourcing service providers required and fragmented supplier network** — Considering all the challenges in each discovery and development steps of ADC development, outsourcing has become a natural strategy for pharmaceutical and biotechnology companies. Despite strong outsourcing demands, most outsourcing service providers are only capable of handling specific segments of the process due to the interdisciplinary nature of antibody and payload-linker discovery, complex transition to CMC and multiple facilities required for development and manufacturing. Consequently, completing the full discovery and development process usually entails engaging multiple outsourcing service providers, which resulted in long development life cycle, potential delays and disruptions in the supply chain and potential loss of accountability when transitioning between outsourcing service providers.

For a typical ADC project, antibody, payload-linker, conjugation process development and formulation are moving forward in parallel, and highly dependent on each other. As ADCs are complex molecules, which require clean room biologic and high containment cytotoxic facilities for safe handling, most companies may find it challenging and even economically unviable to manage every aspect of the entire ADC development process. Hence, outsourcing has emerged as a preferred business strategy in this domain.

### OVERVIEW OF GLOBAL ADC OUTSOURCING SERVICES MARKET

#### Overview of key process and value chain of ADC outsourcing services market

ADC outsourcing services cover every stage of the ADC development process, starting from discovery and extending to commercial manufacturing. The intricate and highly technical nature of ADC development has led the majority of pharmaceutical and biotech companies to rely on outsourcing partners for ADC development.

- **Discovery** — The process of ADC discovery, leading to the identification of a preclinical ADC drug candidate with desired properties, involves six crucial steps. These steps encompass: (1) target selection, (2) discovery of antibody intermediate for bioconjugate, (3) payload-linker discovery chemistry, (4) conjugation discovery, (5) physicochemical characterization and developability discovery, (6) *in vitro* and *in vivo* bio-function activity studies.
- **Development** — During the development phase, various activities are undertaken to optimize ADC’s production to ensure manufacturing consistency and successful scale-up. This includes optimizing the antibody expression conditions and purification processes, conducting payload-linker medicinal chemistry analysis and optimization, developing the payload-linker synthesis process, optimizing the conjugation process, formulating and developing the drug product (“DP”), non-GMP manufacturing, conducting IND-enabling toxicity studies, preparing the CMC dossier, and providing regulatory support until the drug candidate receives approval from regulatory authorities.

Due to the complex nature of the development process and the stringent quality control requirements, it is uncommon to switch outsourcing service providers after this stage, if the chosen outsourcing service provider offers a comprehensive range of services spanning development and manufacturing.

## INDUSTRY OVERVIEW

- Manufacturing** — Manufacturing services encompass the production of all components necessary for ADCs, including manufacturing antibody intermediates specifically tailored for ADCs. This also entails manufacturing payload-linkers, ADC drug substances, and ADC drug products in various scales and forms to meet the clinical and commercialization needs of customers, which needs to comply with requirements of FDA, the NMPA, the EMA and other regulatory agencies.

According to Frost & Sullivan, the global outsourcing rate for ADC discovery, development and manufacturing has reached approximately 70%, surpassing the 34% outsourcing rate observed for overall biologics by the end of 2022.

It is noteworthy that out of the 15 globally approved ADC drugs, 13 have been manufactured by outsourcing service providers, with the majority of them being outsourced to multiple outsourcing service providers. The following table illustrates an overview of global approved ADC outsourcing manufacturing:

**Approved ADC Globally and Outsourcing Status**

Drug Name	Company	Outsourcing Status	Whether Outsourced to Multiple Suppliers
Mylotarg	Pfizer	N	–
Adcetris	Seagen/Takeda	Y	Y
Kadcyla	Roche	Y	Y
Besponsa	Pfizer	N	–
Lumoxiti	AstraZeneca	Y	Y
Polivy	Roche	Y	N
Padcev	Seagen/Astellas	Y	Y
Enhertu	Daiichi Sankyo/ AstraZeneca	Y	Y
Trodelvy	Gilead	Y	Y
Blenrep	GlaxoSmithKline	Y	Y
Akalux	Rakuten Medical	Y	NA
Zynlonta	ADC Therapeutics	Y	Y
Disitamab vedotin	RemeGen	Y	NA
Tivdak	Genmab/Seagen	Y	N
Elahere	ImmunoGen/ Huadong Medicine	Y	NA

Source: Frost & Sullivan Report

Note: “NA” means information not publicly available.

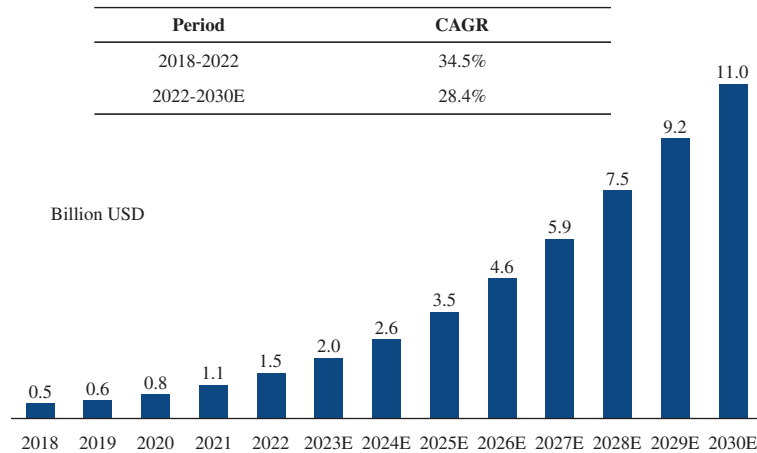
### Global ADC outsourcing services market

The global market for ADC outsourcing services reached a value of US\$1.5 billion in 2022, exhibiting a CAGR of 34.5% between 2018 and 2022. This growth outpaced the overall biologics outsourcing services market, which had a CAGR of 21.8% during the same period. It is expected that the global ADC outsourcing services market will expand significantly to reach US\$11.0 billion by 2030, with a CAGR of 28.4% from 2022 to 2030.

## INDUSTRY OVERVIEW

The following chart sets forth global ADC outsourcing services market size between 2018 and 2030.

### Global ADC Outsourcing Services Market Size Between 2018 and 2030E



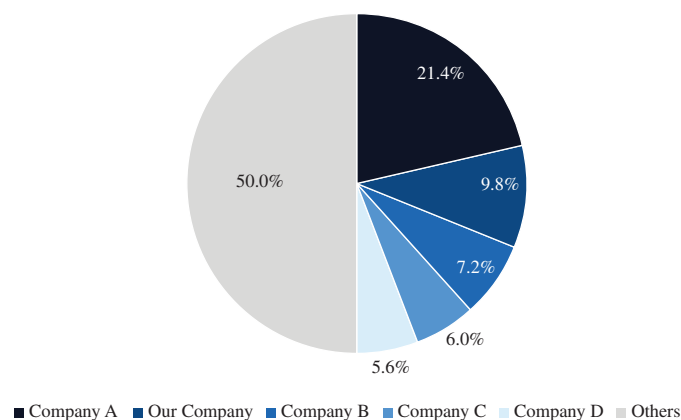
Source: Frost & Sullivan Report

### *Competitive landscape of Global ADC outsourcing services market*

The global market for ADC outsourcing services exhibits a relatively concentrated landscape, with the top 5 players collectively holding a market share of 50.0% in 2022 in terms of revenue.

In terms of revenue in 2022, our Company ranked the second in the global ADC outsourcing service market with a market share of approximately 9.8%, according to Frost & Sullivan. The largest player has approximately 21.4% market share measured by revenue in 2022. The following pie chart shows the market shares of top players in the global ADC outsourcing service market in terms of revenue in 2022:

### Global Competitive Landscape (by Revenue) in 2022




Source: Frost & Sullivan Report

## INDUSTRY OVERVIEW

In addition, our Company stands out as the sole global player offering dedicated full-spectrum capabilities throughout the entire discovery, development, and manufacturing process of ADCs. The following table sets forth a comprehensive comparison of capabilities of top global ADC outsourcing service players as of the Latest Practicable Date.

### Comparison of Capabilities of Top Global ADC Outsourcing Service Players

Company	Capabilities				ADC Dedicated Process			Full spectrum of ADC production facilities located within 1-2 hours driving
	mAb	Payload-linker	Conjugation	DP (Drug product)	R	D	M	
 XDC	√	√	√	√	√	√	√	Yes
Company A	√	√	√	√		√	√	No
Company B	√	√	√			√	√	No
Company C		√	√			√	√	No
Company D	√	√	√	√		√	√	No

Source: Frost & Sullivan Report

Following the global trend of high demand of ADC outsourcing services, China ADC outsourcing services market will continue its upward trajectory, reaching an estimated value of RMB\$16.5 billion by 2030, with a CAGR of 35.9% from 2022 to 2030. Our Company holds the No.1 position in China’s ADC outsourcing services market in both revenue and the number of integrated projects for ADCs and other bioconjugates in 2022. Our Company’s market leading position is highlighted by a significant market share of approximately 69.5% by revenue for 2022 in the China market.

### Entry barriers and key success factors in the ADC outsourcing services market

The following factors present entry barriers and key success factors that contribute to the dynamic and competitive ADC outsourcing services market.

- **Research, development and manufacturing expertise across modalities** — The development of ADCs requires interdisciplinary capabilities and expertise in both biologics and small molecules, which requires seamless coordination among different steps of development. To advance an ADC project from DNA to IND, the industry timeline typically ranges from 24 to 30 months involving different outsourcing service providers. Companies with integrated end-to-end capabilities dedicated for ADC development enjoy unparalleled advantages by saving time and costs while ensuring superior quality control.

---

## INDUSTRY OVERVIEW

---

- ***Proximately located facilities with integrated capabilities to minimize supply chain complexity*** — As ADC development and manufacturing requires specialized facilities for different components and conjugation process, suppliers with integrated capabilities in both biologics and small molecules, across the supply chain from discovery to manufacturing are key in ADC outsourcing services. Scattered and geographically dispersed facilities result in increased transportation costs and logistic difficulties. Companies that possess proximately located, while dedicated and specialized facilities can effectively reduce logistical challenges, shorten ADC production time with assured quality and reduced cost.
- ***Comprehensive technical capabilities and capacity to support diversified needs*** — Players with integrated and comprehensive technology toolbox, characterized by extensive experience in a myriad of bioconjugates and their components, conjugation technologies, as well as scale-up capabilities can effectively deliver quality results efficiently for the discovery and development process. Moreover, world-class laboratories and GMP manufacturing facilities are necessary to handle highly toxic compounds safely, including but not limited to the facilities designed to handle Occupational Exposure Band 5 (“**OEB 5**”) substances, ranging from milligrams to kilograms.
- ***Highly regulated process requiring proven quality track record*** — The strict and complex quality assurance standards mandated by regulatory bodies, coupled with the protracted approval process, have elevated barriers to entry for new entrants in the market. Customers, especially global leading pharmaceutical companies, would prefer to partner with outsourcing players that possess GMP quality track records and advanced quality control systems. Only the most exceptional players are able to achieve a proven track record in meeting customer specifications and applicable regulatory standards, and as a result to secure long-term contracts with existing clients and attract new ones.

The R&D of ADCs requires extensive biological, chemical and manufacturing know-how and capabilities that span across biologics, small molecules and bioprocessing. The increasing development and manufacturing needs for ADCs are expected to demand more outsourcing services from ADC CRDMOs with fully integrated end-to-end capabilities that enable the rapid advancement of ADC candidates. Our Company stands out as the only global ADC outsourcing service provider with full-spectrum capabilities, encompassing discovery, development, and manufacturing, as well as facilities conveniently located within a 1-2 hour driving distance.

### **Market trends and growth drivers of ADC outsourcing services market**

With the rise in R&D investments of the global ADC market, the demand for outsourcing services for ADC and other bioconjugates development will continue to grow. Outsourcing service providers with integrated comprehensive capabilities that are able to accelerate development timelines and ensure high quality for clients have rapidly gained market share in the past three years and are expected to continue to lead the outsourcing services market growth. As ADC-focused biotech companies in China continue to seek global partners, they are expected to partner with leading CRDMOs with stringent quality standard and global reputation. Capacities are expected to increase globally for discovery, development, and manufacturing of ADC and other bioconjugate drugs.

## INDUSTRY OVERVIEW

---

The following is a summary of the key growth drivers that are expected to further contribute to the global ADC outsourcing services market.

- ***Continuous innovation and increasing R&D spending in ADC and broader bioconjugates*** — The continuous innovation in conjugation technology and ADC drug development is expected to further drive the high demand for outsourcing services. Other than ADC, broader bioconjugate drugs with novel carriers and payload-linkers targeting expanding therapeutic areas require continuous support from outsourcing service providers, especially those with integrated end-to-end service capabilities that can provide efficient and reliable solutions.
- ***Increasing demand for efficient supply chain management*** — The complicated discovery, development and manufacturing process requires interdisciplinary expertise in both biologics and small molecule compounds. The ability to efficiently manage the complex supply chain to ensure smooth transition between steps with assured quality is increasingly important for pharmaceutical companies. Outsourcing service providers with strong capabilities in supply chain management, especially those with strategically located facilities within geographical proximity, are expected to benefit from the increasing demand.
- ***Continuous technology improvement*** — As the industry evolves and expands from ADCs to broader bioconjugates, outsourcing service providers with innovative technologies focused on developing conjugation technology for novel linkers, new carriers and payloads would be in increasing demand. Leading players with cutting-edge technologies and proprietary conjugation platforms can provide customers with various choices in the fast-growing bioconjugates development process, which is critical for biopharmaceutical companies in its discovery and development process.