

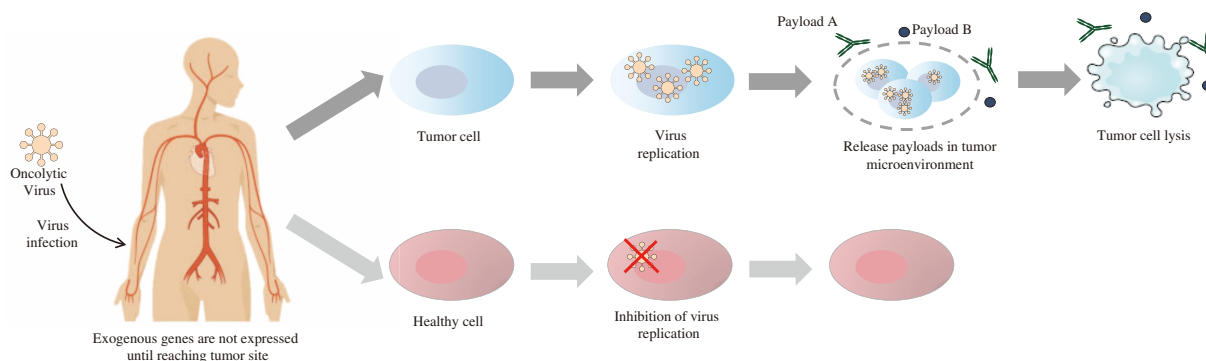
INDUSTRY OVERVIEW

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OVERVIEW OF ONCOLYTIC IMMUNOTHERAPY

Introduction to Oncolytic Immunotherapy

Oncolytic immunotherapy, or oncolytic virus therapy, is a cancer treatment that utilizes oncolytic virus, which selectively replicate within tumor cells without harming normal tissues. By exploiting viral tumor selectivity, oncolytic immunotherapy selectively replicate within tumor cells, causing direct tumor cell lysis while sparing normal tissues, and simultaneously inducing immunogenic cell death with the release of tumor-associated antigens (“TAAs”) and inflammatory signals. This immune activation enhances antigen presentation and tumor-specific T-cell responses, which may extend beyond the initial site of viral infection and generate a systemic, durable anti-tumor effect. The following diagram illustrates the mechanism of action of oncolytic immunotherapy.



Source: Literature Review, Frost & Sullivan Report

Evolution of Oncolytic Immunotherapy

With accumulated research on oncolytic viruses dating back to the mid-19th century, Amgen’s T-VEC has become the first FDA-approved oncolytic immunotherapy since 2015. The approval of HSV-1 based T-VEC marked a key milestone in the oncolytic immunotherapy field, to which our Company’s founder made significant contributions during its early development. Recent development trends have increasingly focused on evolving viral backbones and optimizing payloads to further enhance efficacy and safety of oncolytic immunotherapy.

Various viral vectors have been extensively explored for use as vector in oncolytic immunotherapy, including DNA viruses such as herpes simplex virus (“HSV”), vaccinia virus and adenovirus, as well as RNA viruses such as reovirus and measles virus. Among these, HSV-1 has emerged as the most favored vector for oncolytic immunotherapy development due to its natural human host compatibility, large genome capacity, high modifiability, and promising safety profile, being the backbone of the only FDA-approved oncolytic immunotherapy product as of the Latest Practicable Date. Compared with RNA viruses and other DNA viruses such as adenovirus, HSV-1 enables the insertion of multiple exogenous immune-enhancing genes and safety optimization through deletion of virulence genes such as ICP34.5.

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As a key determinant of therapeutic efficacy and safety, the administration routes are of great importance in the development of oncolytic immunotherapy. Currently, three main administration routes are employed for approved products and clinical candidates:

- ***Intratumoral administration.*** To date, intratumoral administration remains the most common method, involving direct injection of the virus into accessible tumors. It enables high local viral concentration while minimizing systemic exposure but is limited to superficial or image-guided injectable lesions.
- ***Intravenous administration.*** Intravenous injection is considered a breakthrough direction for systemic delivery, aiming to target metastatic and deep-seated tumors. However, it may lead to dose dilution in circulation, rapid immune clearance, immunogenic toxicity, and off-target effects. Particularly, it is a route of administration with the highest drug exposure, the broadest systemic injection, and the highest risk for dosing patients.
- ***Intracavitary administration.*** Intracavitary administration encompasses intravesical, intraperitoneal, and intrapleural delivery routes, enabling localized treatment within the thoracic cavity, abdominal cavity, and bladder, respectively, with high local drug concentration and reduced systemic toxicity.

Beyond viral backbone selection and modification, the engineering of transgene payloads also plays a key role in advancing oncolytic immunotherapy by expressing immune-modulating agents within the tumor microenvironment, thereby enhancing both local and systemic responses. While GM-CSF remained one of the earliest most widely adopted options, the field evolved toward more refined immunotherapeutic payloads, including anti-PD-(L)1 antibodies, and IL-12, both of which can elicit robust anti-tumor effects while minimizing the systemic toxicity.

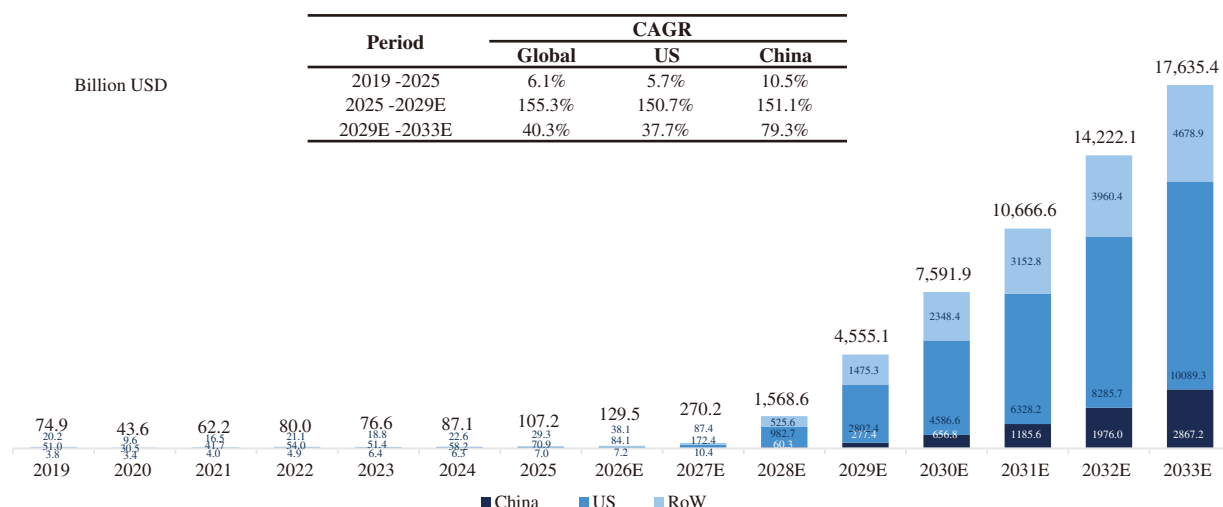
Oncolytic Immunotherapy Drug Market

The global oncolytic immunotherapy drug market is currently in its nascent stage, characterized by a limited number of commercialized products and limited clinical adoption. As a result, prescribing practices among physicians are not yet well established, which, with the COVID-19-related disruption, led to the fluctuations of the oncolytic immunotherapy market size between 2019 and 2025. Although T-VEC was approved in 2015, its market penetration during 2019 to 2025 remained modest, in part due to its limited efficacy as a monotherapy in late-stage melanoma.

Recent years have witnessed oncolytic immunotherapy achieving promising readouts and a growing pipeline of drug candidates, as well as expanded scope of targeted indications. For example, the total global incidence of bladder cancer, head and neck squamous cell carcinoma (HNSCC) and glioma indications where oncolytic immunotherapy demonstrates significant therapeutic potential amounted to approximately 2.11 million cases in 2025, and is projected to increase to approximately 2.52 million cases by 2033. As of the Latest Practicable Date, five oncolytic immunotherapy drugs had been approved globally, and seven oncolytic immunotherapy candidates were in pivotal Phase II/III or later stage worldwide, with more than 30 additional candidates in Phase I/II. According to Frost & Sullivan, at least 10 new oncolytic immunotherapies are expected to receive global approval between 2026 and 2033. In particular, at least six new oncolytic immunotherapies are expected to be approved in China between 2025 and 2033, with their indicated scopes encompassing a wider range of solid tumor types, demonstrating notable momentum in China’s oncolytic immunotherapy market. The charts below set forth market sizes of oncolytic immunotherapy drug markets.

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Oncolytic Virus Drug Market in China, US and Globally, 2019-2033E



Source: Annual Report, International Agency for Research on Cancer (IARC), ClinicalTrials.gov, CDE, Frost & Sullivan Report

Competitive Landscape of Oncolytic Immunotherapy

As of the Latest Practicable Date, five oncolytic immunotherapy drugs had been approved globally, including only one adenovirus serotype 5 (Ad5)-based oncolytic immunotherapy product (H101) approved in China. The table below sets forth a summary of oncolytic immunotherapy drugs approved as of the Latest Practicable Date.

Drug Name	Company	Vector	Indications	Drug Delivery Method	Approved Region	Approved Date	Latest Price	Reimbursement
Rigvir	Latima	ECHO -7	Melanoma	Intramuscular injection	Armenia, Georgia, Latvia, Uzbekistan	2004 -04	\$400/2mL	Fully reimbursed in Latvia
H101, 安柯瑞	Shanghai Pharma	Ad5	Nasopharyngeal carcinoma	Intratumoral	China	2005 -11	~\$360/0.5mL	Not in NRDL
T-VEC, Imlygic	Amgen	HSV-1	Melanoma	Intralesional injection	US, Europe	2015 -10	~\$2,130/mL	Depends on insurance plan/ Amgen SupportPlus
Delytact / G47Δ	Daiichi Sankyo	HSV-1	Malignant Glioma	Intratumoral	Japan	2021 -06	~\$9,500/mL	NHI listed
Telomelysin	Oncolys BioPharma	Ad5	Esophageal Cancer	Intratumoral	Japan	2026 -06	/	Not in NHI

Sources: FDA, CDE, NMPA, Frost & Sullivan Report

Currently, there are one oncolytic immunotherapy candidate under the NDA stage, four in Phase III, two in Phase II/III, 12 in Phase II, 19 in Phase I/II and 33 in Phase I trials globally. Among these, only one Phase III-stage, one Phase II/III-stage and six Phase II-stage oncolytic immunotherapy candidates were under clinical development in China as of the Latest Practicable Date. The major viral vectors under development include HSV-1 and adenoviral vectors such as Ad5 and AdV. The primary indications being investigated are solid tumors, including melanoma, liver cancer, colorectal cancer, bladder cancer, and head and neck squamous cell carcinoma (HNSCC). Among these candidates, 60, 15 and 18 are administered via intratumoral, intracavitary (including intravesical), and intravenous routes, respectively. The table below sets forth the current global competitive landscape of oncolytic immunotherapy in Phase II trials and beyond.

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Drug Name	Company	Vector	Indications	Drug Delivery Method	Region	Stage	First Posted Date
RP-1	Replimune	HSV-1	Melanoma	Intratumoral	US	BLA	2025-10
Olvi-Vec	Genelux Corporation	Poxviridae	Epithelial ovarian cancer	Intracavitary, Intravenous	US	Phase III	2022-03
CG0070	CG Oncology	Ad5	NMIBC	Intracavitary	US, Japan, Canada, Australia, Korea, Taiwan	Phase III	2020-06
CAN-2409	Candel Therapeutics	AdV	Prostate cancer	Intratumoral, Intracavitary	US	Phase III	2011-09
BS001	Binhui Biotechnology	HSV-2	Melanoma	Intratumoral	China	Phase III	2023-01
VRT106	Virotech Pharmaceutical	Alphavirus	Advanced HCC	Intravenous, Intratumoral	China	Phase II/III	2026-04
RP-2	Replimune	HSV-1	Metastatic uveal melanoma	Intratumoral	US	Phase II/III	2024-09
MVR-T3011	ImmVira	HSV-1	NMIBC, HNSCC	Intratumoral, Intracavitary, Intravenous	US, China	Phase II	2025-05
VG201	Virogin Biotech	HSV-1	Intrahepatic cholangiocarcinoma	Intratumoral, Intracavitary	China	Phase II	2026-04
VCN-01	VCN Biosciences, Theriva Biologics	AdV	Pancreatic cancer	Intratumoral	US, EU	Phase II	2022-06
VG161	Virogin Biotech	HSV-1	Intrahepatic cholangiocarcinoma, Bone and soft tissue sarcoma, HCC	Intratumoral	US, China	Phase II	2021-12
AdAPT-001	EpicentRx	Ad5	Sarcoma and refractory solid tumors	Intratumoral	US	Phase II	2020-12
Lerapolturev	Istari Oncology	PV	Glioma, Glioblastoma, Melanoma	Intratumoral	US	Phase II	2016-12
Tasadenoturev	DNAtrix, Alcyone Therapeutics	Ad5	Glioblastoma/Gliosarcoma tumor	Intratumoral	US, Canada	Phase II	2016-06
Gebasxturev	ViroTarg	CVA21	Melanoma	Intratumoral, Intravenous	US	Phase II	2010-10
Pelareorep	Oncolytics Biotech	Reovirus	Pancreatic cancer, Breast cancer	Intravenous	US	Phase II	2009-10
CVD-1301.V01	Hangzhou Converd	Poxviridae	Cervical cancer, Sarcoma, Pancreatic cancer	Intratumoral	China	Phase II	2024-11
YH01	Infinory Pharmaceuticals	AdV	NMIBC	Intratumoral, Intracavitary	China	Phase II	2024-10
OrienX-10	OrienGene Biotechnology, Seven and Eight BioPharma	HSV-1	Unresectable malignant melanoma	Intratumoral	China	Phase II	2017-12

Sources: *Clinicaltrials.gov, CDE, NMPA, Frost & Sullivan Report*

Key Drivers and Development Trend of Oncolytic Immunotherapy

There remain significant unmet medical needs that oncolytic immunotherapy is uniquely positioned to address. Specifically:

- ***Technological differentiation and immune activation.*** Replication-competent oncolytic viruses confer distinct advantages over non-replicating gene therapies, most notably their ability to selectively amplify within the tumor and elicit robust systemic immune responses.
- ***Overcoming resistance to conventional immunotherapies.*** By remodeling the tumor microenvironment and boosting immune activation, oncolytic immunotherapy not only enhances the efficacy of conventional immunotherapies, CAR-T therapies, and chemotherapies, but also helps counteract resistance to PD-1/PD-L1 or CTLA-4 blockade.
- ***Advancements in delivery methods.*** Oncolytic immunotherapy is inherently versatile and can be delivered through multiple routes depending on tumor type and anatomical accessibility. Route-specific delivery methods, such as intravesical infusion for non-muscle invasive

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bladder cancer (NMIBC) and intratumoral administration for tumors such as head and neck squamous cell carcinoma (HNSCC), broadens the clinical utility and applicability of oncolytic immunotherapy across diverse solid tumors.

Building on these emerging benefits, the development of oncolytic immunotherapy must address several key challenges, which are actively being tackled through ongoing technological and process innovations. Specifically:

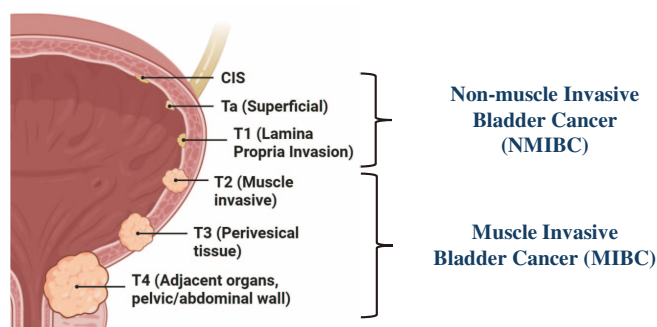
- ***Converting antiviral immunity into anticancer immunity.*** Upon administration, oncolytic immunotherapy may elicit an immune response that limits their oncolytic efficacy. Current strategies to address this include modifying the viral backbone to preserve its natural ability to evade antibody neutralization, and engineering cytokine-expressing vector cells to enhance anti-tumor immunity and sustain viral activity.
- ***Expanding clinical applications.*** Oncolytic immunotherapy is effective against small lesions but typically have limited efficacy against larger lesions or uninjectable metastases. Enhancing viral vector replication ability, systemic delivery, improving tumor targeting, and boosting immune responses are key areas of ongoing research to fulfill unmet clinical needs.
- ***Improving oncolytic immunotherapy production technologies.*** The manufacturing of oncolytic immunotherapy products encompasses multiple complex steps. Technologies such as serum-free suspension culture, microcarrier bioreactors and fixed bed bioreactors are being adopted to improve efficiency, though cost-performance balance remains a challenge.

Major Indications for Oncolytic Immunotherapy

Bladder Cancer

Bladder cancer arises from combined environmental and genetic factors, with cigarette smoking being the predominant cause due to urinary excretion of carcinogenic compounds. Bladder cancer primarily affects older adults — typically individuals aged 65–75. While incidence is higher in men, women tend to present with more advanced disease, and geographical variation is notable, with urothelial carcinoma prevalent in developed regions and squamous cell carcinoma more common in schistosomiasis-endemic areas. The incidences of bladder cancer reached 656.2 thousand, 84.9 thousand, and 102.2 thousand globally, in the U.S., and China in 2025, respectively, which are expected to increase to 833.1 thousand, 89.9 thousand, and 125.7 thousand in 2033, respectively.

Bladder cancer is broadly classified into two main types based on the depth of tumor invasion: non-muscle invasive bladder cancer (NMIBC) and muscle-invasive bladder cancer (MIBC), representing for approximately 75% and 25% of all newly diagnosed bladder cancer cases, respectively. The below picture depicts the pathologic anatomy of NMIBC and MIBC.



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Source: Literature Review, Frost & Sullivan Report

NMIBC

NMIBC refers to malignant urothelial tumors that are confined to the bladder mucosa (stages CIS and Ta) or have invaded only the lamina propria (stage T1) without reaching the muscle layer. NMIBC accounts for approximately 75% of all newly diagnosed bladder cancer cases and typically associated with a lower risk of progression compared to MIBC. The incidences of NMIBC reached 459.3 thousand, 59.2 thousand, and 70.5 thousand globally, in the U.S., and China in 2025, respectively, which are expected to increase to 583.2 thousand, 62.7 thousand, and 86.7 thousand in 2033, respectively.

Based on tumor growth pattern and histological features, NMIBC is classified based into two main subtypes: papillary and carcinoma *in situ* (CIS).

- Papillary NMIBC typically includes stage Ta and T1 tumors, representing for approximately 90% of NMIBC cases. Ta tumors typically involve superficial lesions confined to the mucosal layer, accounting for around 70% of NMIBC cases. T1 tumors invade the lamina propria, a layer rich in blood and lymphatic vessels, and account for approximately 20% of NMIBC. Due to their access to vascular and lymphatic channels, T1 tumors carry a higher risk of progression compared to Ta lesions.
- CIS NMIBC accounts for the remaining approximately 10% of NMIBC cases and is characterized by flat, high-grade lesions confined to the mucosa. CIS is often more aggressive and has a higher potential for progression despite its non-invasive appearance.

MIBC

MIBC refers to bladder cancer that has invaded the muscularis propria (stages T2 to T4). Approximately 25% of newly diagnosed bladder cancer patients are diagnosed with MIBC, and among them, around 5% present with metastatic disease. The incidences of MIBC reached 153.1 thousand, 19.6 thousand, and 23.5 thousand globally, in the U.S., and China, in 2025, which are expected to increase to 194.3 thousand, 20.8 thousand, and 28.9 thousand in 2033, respectively.

Treatment Paradigm for Bladder Cancer

Treatment Paradigm for NMIBC

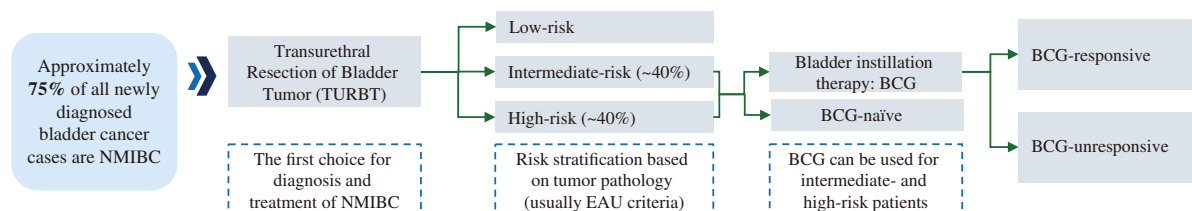
Transurethral resection of bladder tumor (TURBT) is the standard initial treatment for NMIBC, which removes visible tumor lesions from the bladder, providing both diagnostic tissue for pathological evaluation and therapeutic tumor debulking. Following TURBT, intravesical instillation therapy is commonly administered as an adjuvant treatment to target residual microscopic disease within the bladder mucosa and can also stimulate local immune responses.

There are different adjuvant intravesical instillation strategies based on risk stratification. Patients treated with TURBT are stratified into low-risk, intermediate-risk, and high-risk groups based on tumor pathology. Intermediate-risk patients, accounting for approximately 40% of NMIBC cases, are generally recommended to receive either one year of full-dose Bacillus Calmette-Guérin (BCG) therapy or intravesical chemotherapy. High-risk patients, also comprising around 40% of the population, are advised to undergo a three-year course of full-dose BCG instillation followed by maintenance therapy to optimize long-term outcomes. Although BCG remains the standard of care for high-risk NMIBC, its use is significantly limited by global supply shortages. In the U.S., BCG supply meets less than 30% of the total demand. In China, there were a total of 63.1 thousand patients with BCG-naïve NMIBC in 2025.

Based on prior exposure to BCG therapy, patients are further categorized into three types: BCG-naïve (no prior BCG treatment), BCG-exposed (previous BCG but not meeting criteria for BCG-unresponsive) and BCG-unresponsive (failure after adequate BCG therapy). Approximately 60%

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of patients eventually become unresponsive to BCG, facing increased risks of tumor recurrence and progression. The number of patients with BCG-unresponsive NMIBC and BCG-naïve NMIBC amounted to 3.2 thousand and 63.1 thousand in 2025, respectively.



Source: Literature Review, Frost & Sullivan Report

High-risk NMIBC represents roughly 40% of all NMIBC cases. Of these high-risk NMIBC patients, about 40% are BCG-naïve who have never received BCG treatment, while approximately 60% of those who do receive BCG therapy ultimately become BCG-unresponsive.

For BCG-naïve patients, the current preferred approach is TURBT followed by single instillation (SI) of chemotherapy and full-dose intravesical BCG therapy for up to three years, including induction and maintenance phases. Radical cystectomy (RC) may also be considered in high-risk cases. For BCG-unresponsive patients (failure after adequate BCG therapy), the standard of care is RC, which offers the best chance for long-term disease control. For patients who are ineligible or unwilling to undergo surgery, alternative options include intravesical chemotherapy (IC) or systemic immunotherapy with pembrolizumab, which is FDA-approved for high-risk BCG-unresponsive NMIBC with CIS.

Despite the absence of currently approved oncolytic immunotherapy in the bladder cancer treatment, oncolytic immunotherapy represents an innovative treatment modality in NMIBC. In particular, oncolytic immunotherapy offers a promising alternative to address the clinical challenges posed by BCG-unresponsive patients and the global shortage of BCG. Our Company’s Core Product, MVR-T3011, is poised for the second-line treatment of high-risk NMIBC and high-risk BCG-naïve NMIBC, addressing recognized unmet medical need.

Treatment Paradigm for MIBC

For non-metastatic MIBC, the standard approach is radical cystectomy to remove the bladder and any regional disease, often combined with neoadjuvant chemotherapy (e.g. dose-dense methotrexate, vinblastine, doxorubicin, and cisplatin or gemcitabine + cisplatin) to kill any tiny cancer cells that might have spread. For patients who are unfit for surgery or prefer bladder preservation, a bladder-sparing strategy offers an alternative curative option — removing as much of the tumor as possible through TURBT, followed by combined chemotherapy and radiation.

For metastatic MIBC, treatment shifts to systemic therapy aimed at prolonging survival and improving quality of life. Cisplatin-based chemotherapy remains the first-line treatment for eligible patients, while immune checkpoint inhibitors as monotherapy and combination therapy with other anti-tumor agents are increasingly used for those who are cisplatin-ineligible or who progress after chemotherapy.

Although as of the Latest Practicable Date, oncolytic immunotherapy has not yet been included in the established treatment paradigms for MIBC, it has the potential to be incorporated into future MIBC treatment strategies, particularly as an adjunct to existing therapies.

Competitive Landscape of Oncolytic Immunotherapy for Bladder Cancer

In 2025, biologic drugs (including BCG) represented the largest and fastest-growing segment of the global bladder cancer drug market, accounting for approximately 59.9%, while chemical drugs accounted for the remaining 40.1%. As of the Latest Practicable Date, there were 23 approved drugs

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and 120 drug candidates in Phase II or above clinical stages for the treatment of bladder cancer globally. The table below provides a summary of the competitive landscape of innovative new drugs for bladder cancer therapies as of the Latest Practicable Date.

Category	Number of Approved Drugs	Line of Approved Treatment	Approved Monotherapy / Combination Use	Number of Drugs in Clinical Phase II and Above	Advantage	Limitation
BCG	1	First	Mono	0	<ul style="list-style-type: none"> BCG is standard for high-risk NMIBC The only immunotherapy that reduces the risk of progression from high risk NMIBC to MIBC 	<ul style="list-style-type: none"> Long-term use may cause adverse events Global BCG shortage limits clinical accessibility
Chemicals	10	First (for chemotherapy)	Mono/Combo, depends on treatment options	43	<ul style="list-style-type: none"> Widely available with low cost Standard treatment for postoperative instillation in low/intermediate-risk NMIBC 	<ul style="list-style-type: none"> Limited efficacy with high recurrence rate in high -risk NMIBC
Antibodies	10	First, Second or later, Neoadjuvant	Mono/Combo	63	<ul style="list-style-type: none"> Systemic therapy after local treatment failure 	<ul style="list-style-type: none"> Relatively high cost
Oncolytic Virus	0	/	/	3	<ul style="list-style-type: none"> Provides dual anti-tumor mechanisms: direct lysis and immune activation High local dose via intravesical administration, low systemic toxicity Can work with ICI, chemo, or radiotherapy 	<ul style="list-style-type: none"> Currently largely limited to second-line and later, as well as neoadjuvant settings Currently no approved drugs, relatively limited data to substantiate OV's efficacy
Other Biologics	2	Second or later	Mono	11	<p>Gene therapy:</p> <ul style="list-style-type: none"> Provides BCG-unresponsive patients more clinical options Offers bladder-sparing option <p>Interleukin/Porphyrin:</p> <ul style="list-style-type: none"> Combine immune system activation with porphyrin-based photodynamic tumor cell killing 	<p>Gene therapy:</p> <ul style="list-style-type: none"> Novel therapy with limited clinical data <p>Interleukin/Porphyrin:</p> <ul style="list-style-type: none"> Needs light, and not for deep tumors, limiting efficacy, not commonly used
Total	23			120		

Note: Only innovative new drugs are included.

Source: FDA, CDE, NMPA, Frost & Sullivan Analysis

The table below sets forth a summary of current major marketed drugs for NMIBC and MIBC as of the Latest Practicable Date.

Category	Drug Name	Company	Year of Approval ¹	Indications	Line of Treatment	Therapy	Annual Cost	2025 Annual Sales ²
Chemical	Epirubicin, gemcitabine, pirarubicin, hydroxycamptothecin, mitomycin C, etc.			Single immediate instillation / intravesical chemotherapy	First	/	/	/
Chemical	TAR-200	J&J	2025, US	BCG-unresponsive NMIBC with CIS with or without papillary tumors	Second or later	Mono	~\$670,000	/
Biologics	Anktiva	ImmunityBio	2024, US	BCG-unresponsive NMIBC with CIS	Second or later	Combo, with BCG	~ \$751,800	~\$113 million
Biologics	Adstiladrin	Ferring	2022, US	BCG-unresponsive NMIBC with CIS	Second or later	Mono	~\$240,000	/
Biologics	Keytruda	Merck	2020, US	BCG-unresponsive NMIBC with CIS	First/Second	Mono	~\$180,000	\$31.68 billion
Biologics	BCG Tice	MSD	1989, US	Treatment and prophylaxis of CIS of urinary bladder; Prophylaxis of primary or recurrent Ta/T1 papillary tumors	First	Mono	~\$3,000	/

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Category	Drug Name	Company	Year of Approval ¹	Indications	Line of Treatment	Therapy	Annual Cost	2025 Annual Sales ²
Chemical	Cisplatin + gemcitabine / ddMAVC, etc.			Chemotherapy	First	/	/	/
Biologics	Imfinzi	AstraZeneca	2025, US	adjuvant treatment following radical cystectomy, for adults with MIBC	Second	Mono	~\$120,000	\$6,063 million
Biologics	Opdivo	BMS	2017, US	Patients with locally advanced or metastatic urothelial carcinoma	First/Second/Neoadjuvant	Mono	~\$185,000	\$10.049 billion
Biologics	Keytruda	Merck	2025, US	Combination as neoadjuvant treatment followed by adjuvant treatment after cystectomy for adults with MIBC who are ineligible for cisplatin	Adjuvant/Neoadjuvant	Combo, with Padcev	~\$585,000	\$31.68 billion
Biologics	Padcev	Pfizer	2025, US			Combo, with Keytruda		\$1,940 million

Notes:

- 1. Refers to the earliest approval date and region for the listed indication.
- 2. Refers to the total revenue generated by the drug in 2025.

Source: FDA, CDE, NMPA, Frost & Sullivan Analysis

The recent approval of Adstiladrin® (nadofaragene firadenovec) illustrates growing regulatory and clinical acceptance of novel intravesical biologic therapies. Nonetheless, as a non-replicating adenoviral vector, its clinical efficacy relies on transient transgene expression, which may limit the durability of immune activation and long-term disease control.

Against this backdrop, oncolytic immunotherapy has emerged as the novel promising treatment for bladder cancer considering its technological differentiation, immune-activating properties, and potential to overcome resistance to conventional therapies. For details, see “— Overview of Oncolytic Immunotherapy — Key Drivers and Development Trend of Oncolytic Immunotherapy.” In addition, as a bladder-preserving approach, oncolytic immunotherapy aligns with the increasing clinical preference for organ-sparing therapies, further underscoring its potential to address unmet medical needs and capture broader clinical adoption. As of the Latest Practicable Date, no oncolytic immunotherapy had been approved for the treatment of bladder cancer. According to Frost & Sullivan, as oncolytic immunotherapy products receive regulatory approvals and are progressively commercialized for bladder cancer, this modality is expected to account for approximately 10% of the global bladder cancer drug market by 2033. Globally, one oncolytic immunotherapy candidate targeting bladder cancer was in a Phase III trial, two in Phase II (including MVR-T3011), and three in Phase I trials. The table below sets forth the global competitive landscape of oncolytic immunotherapy for bladder cancer in Phase II trials and beyond as of the Latest Practicable Date.

Drug Name	Company	Vector	Indication	Drug Delivery Method	Regulatory Authority	Stage	First Posted Date
CG0070	CG Oncology	Ad5	NMIBC	Intracavitary	FDA (MRCT)	Phase III	2020-06
MVR-T3011	ImmVira	HSV-1	NMIBC	Intracavitary	FDA (MRCT)	Phase II	2025-05
YH01	Yinghui Pharma	AdV	NMIBC	Intracavitary	NMPA	Phase II	2024-10

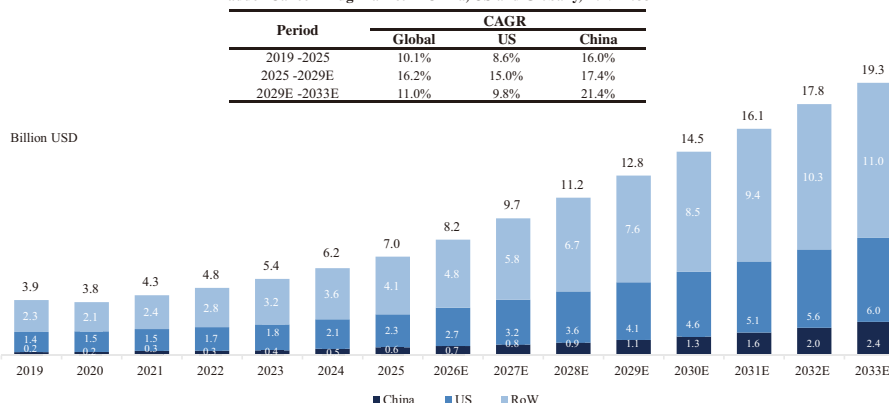
Source: Clinicaltrials.gov, CDE, NMPA, Frost & Sullivan Report

Bladder Cancer Drug Market

The global bladder drug market increased from US\$3.9 billion in 2019 to US\$7.0 billion in 2025, representing a CAGR of 10.1%, which is projected to reach US\$19.3 billion in 2033, representing a CAGR of 13.5% from 2025 to 2033. The chart below sets forth the historical and projected market sizes of the bladder cancer drug markets for the periods indicated.

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Bladder Cancer Drug Market in China, US and Globally, 2019-2033E



Source: Annual Report, IARC, ClinicalTrials.gov, CDE, Frost & Sullivan Report

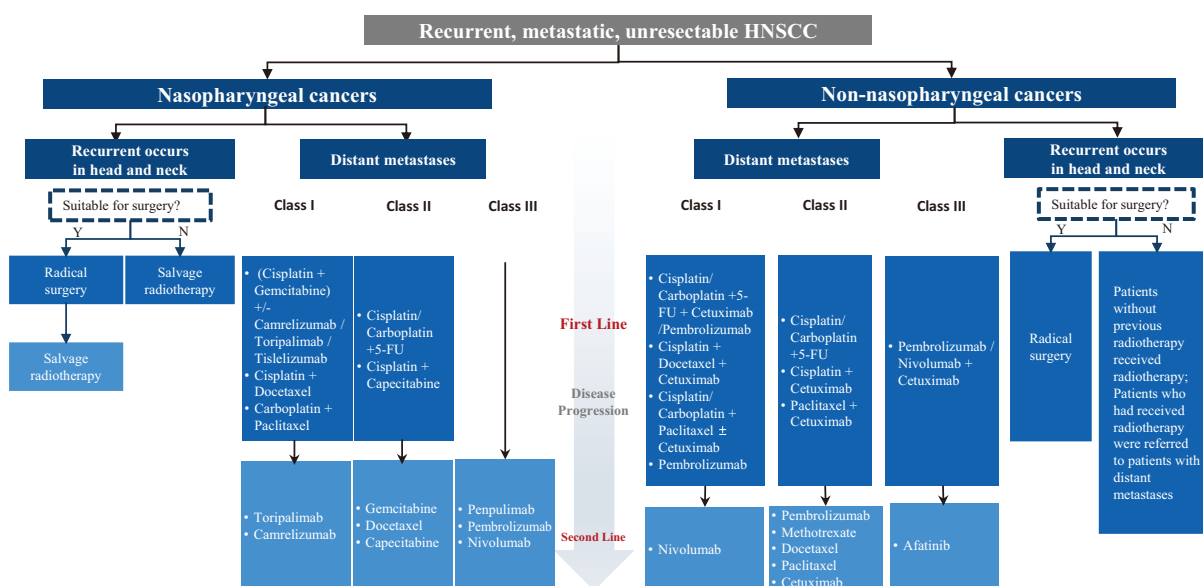
Head and Neck Squamous Cell Carcinoma

Head and neck squamous cell carcinoma (HNSCC) is a malignant tumor often diagnosed at an advanced stage due to the lack of early specific symptoms. In 2025, the number of HNSCC cases reached approximately 912.8 thousand globally, 65.4 thousand in the U.S., and 138.4 thousand in China. These figures are projected to rise significantly by 2033 to 1,073.1 thousand worldwide, 75.2 thousand in the U.S., and 159.0 thousand in China, underscoring the urgent need for improved diagnostics and more effective treatment strategies.

Treatment Paradigm for HNSCC

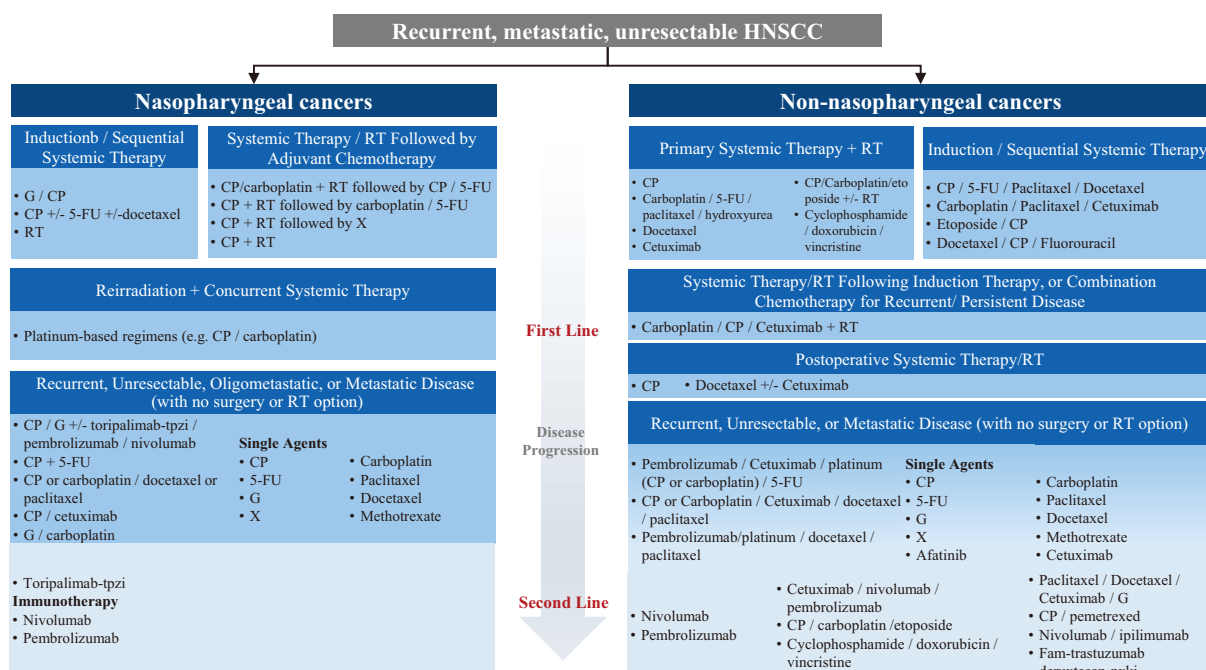
As the most common type of head and neck cancer, HNSCC is typically treated based on the site and stage of disease. The charts below set forth the treatment paradigm for recurrent, metastatic and unresectable HNSCC in China and the U.S., respectively.

Treatment Paradigm for HNSCC in China



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Treatment Paradigm for HNSCC in the U.S.



Notes: Unsuitable for surgery refers to cases where the patient’s physical condition precludes operative intervention, surgery is contraindicated under CSCO guidelines, or the tumor is too large to be resected.

Source: CSCO 2023, Literature Review, Frost & Sullivan Report

Oncolytic immunotherapy exhibits significant potential to offer an innovative treatment therapy for HNSCC, particularly in light of its differentiated mechanism of action, encouraging efficacy observed in early clinical settings, and the need for additional therapies to address treatment resistance and recurrence under current standards of care. Our Company’s Core Product, MVR-T3011, is poised for the third-line treatment of HNSCC for patients after failure of platinum-based chemotherapy and at least one prior anti-PD-(L)1 therapy.

Competitive Landscape of Oncolytic Immunotherapy for HNSCC

As of the Latest Practicable Date, there were seven approved drugs for the treatment of HNSCC globally, including two chemicals and five antibodies. All of these approved therapies are indicated for use as first- or second-line treatments and may be administered either as monotherapy or in combination. As of the same date, there were 148 drug candidates in Phase II or later clinical stages. The table below provides a summary of the competitive landscape for HNSCC.

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Category	Number of Approved Drugs	Line of Approved Treatment	Approved Monotherapy / Combination Use	Number of Drugs in Clinical Phase II and Above	Advantage	Limitation
Chemicals	2	First, Second	Mono/Combo, depends on treatment options	44	<ul style="list-style-type: none"> Standard treatment Synergistic with other treatments Low cost 	<ul style="list-style-type: none"> Significant toxicity Risk of drug resistance Limited efficacy in some subtypes
Antibodies	5	First, Second	Mono/Combo	83	<ul style="list-style-type: none"> Highly targeted, relatively low side effects Some can be combined with chemo/radiotherapy Long-term benefit in some advanced/recurrent cases 	<ul style="list-style-type: none"> Variable efficacy between patients Comparably high cost Risk of immune-related adverse events
Oncolytic Virus	0	/	/	4	<ul style="list-style-type: none"> Oncolysis and immune stimulation Tumor-selective replication with low toxicity May combine well with immune checkpoint inhibitors to boost response rates 	<ul style="list-style-type: none"> Current approved Ovs always use local delivery (intratumoral) limits systemic efficacy Currently no approved drugs, limited advanced pipelines and data to substantiate their efficacy
Other Biologics	0	/	/	17	<ul style="list-style-type: none"> Cell therapy, ASO, gene therapy, peptides, microbiome, etc.: Potentially target common mutations or viral antigens of HNSCC, e.g., CAR-T, ASO May modulate tumor microenvironment to improve immunotherapy response Long-term immune memory to prevent recurrence 	<ul style="list-style-type: none"> No marketed products, limited clinical data, uncertain long-term efficacy High heterogeneity may limit consistent efficacy Potential toxicity or severe inflammation may exist
Total	7			148		

Source: FDA, CDE, NMPA, Frost & Sullivan Analysis

The table below sets forth a summary of marketed drugs for HNSCC.

Category	Drug Name	Company	Year of Approval ¹	Indications	Line of Treatment	Therapy	Annual Cost	2025 Annual Sales ²
Biologics	Finotonlimab	Sinocelltech Group	2025, China	Recurrent and/or metastatic HNSCC in combination with platinum-containing chemotherapy	Second	Combo, with platinum-based therapy	~\$21,562	/
Biologics	Pembrolizumab	Merck	2016, US	Metastatic or with unresectable, recurrent HNSCC	First/Second	Mono/Combo, with platinum and FU	~\$180,000	\$31.68 billion
Biologics	Nivolumab	BMS	2016, US	Adult patients with recurrent or metastatic HNSCC or after platinum-based therapy.	Second	Mono	~\$185,000	\$10.049 billion
Biologics	Nimotuzumab	CIMYM, InnoKeys, etc.	2024, China	Locally advanced HNSCC	First	Combo, with concurrent chemoradiotherapy	~\$5,564	/
Biologics	Cetuximab	Eli Lilly, etc.	2006, US	Recurrent or metastatic HNSCC or locally advanced HNSCC	First/Second	Mono/Combo, with platinum-based therapy and fluorouracil	~\$200,000	\$1,328.9 million
Chemical	Temoporfin	Biolitec Pharma	2001, Europe	Advanced HNSCC	Second or later	Mono	/	/
Chemical	Docetaxel	Sanofi, etc.	1995, Europe	Locally advanced HNSCC	First/Second	Combo, with cisplatin and FU	/	/
Chemicals	Cisplatin, carboplatin, gemcitabine, capecitabine, paclitaxel, etc.			Chemotherapy	First	/	/	/

Notes:

- As of July 7, 2026.
- Refers to the earliest approval date and region for the listed indication.
- Refers to the total revenue generated by the drug in 2025.

Source: FDA, CDE, NMPA, Frost & Sullivan Report

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As of the Latest Practicable Date, no oncolytic immunotherapy drug has been approved for the treatment of HNSCC. Globally, two oncolytic immunotherapy candidates targeting HNSCC were in a Phase II clinical trial, and nine in Phase I. The table below sets forth the current global competitive landscape of oncolytic immunotherapy drug candidates for HNSCC in Phase II trials and beyond.

Drug Name ¹	Company	Vector	Indication	Drug Delivery Method	Regulatory Authority	Stage	First Posted Date
MVR-T3011	ImmVira	HSV-1	Advanced or metastatic solid tumors, incl. advanced HNSCC	Intratumoral	FDA	Phase IIa ²	2020-05
AdAPT-001	EpicentRx	Ad5	Sarcoma and refractory solid tumors incl. HNSCC	Intratumoral	FDA	Phase II	2020-12

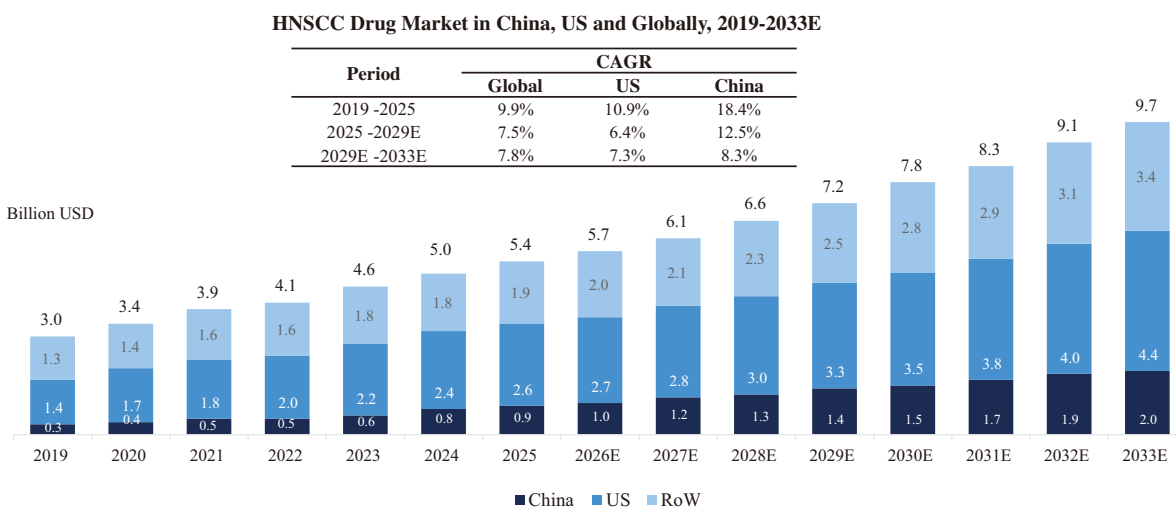
Note:

- As of the Latest Practicable Date.
- The Phase I/II trial of MVR-T3011 began in 2020. After completing the Phase I study, the Phase IIa trial in HNSCC commenced in September 2022.

Source: Clinicaltrials.gov, CDE, NMPA, Frost & Sullivan Report

HNSCC Drug Market

The global HNSCC drug market increased from US\$3.0 billion in 2019 to US\$5.4 billion in 2025, representing a CAGR of 9.9%, which is projected to reach US\$7.2 billion by 2029 and US\$9.7 billion by 2033, representing a CAGR of 7.5% from 2025 to 2029 and 7.8% from 2029 to 2033. The chart below sets forth the historical and projected market sizes of HNSCC globally, in the U.S. and China for the periods indicated.



Source: Annual Report, IARC, ClinicalTrials.gov, CDE, Frost & Sullivan Analysis

Glioma

Glioma represents approximately 40% to 60% of all primary brain tumors, with glioblastoma being the most aggressive and common malignant variant. The incidences of glioma reached 543.3 thousand, 24.4 thousand, and 77.0 thousand globally, in the U.S., and China in 2025, which are expected to increase to 610.4 thousand, 27.6 thousand, and 86.9 thousand in 2033, respectively.

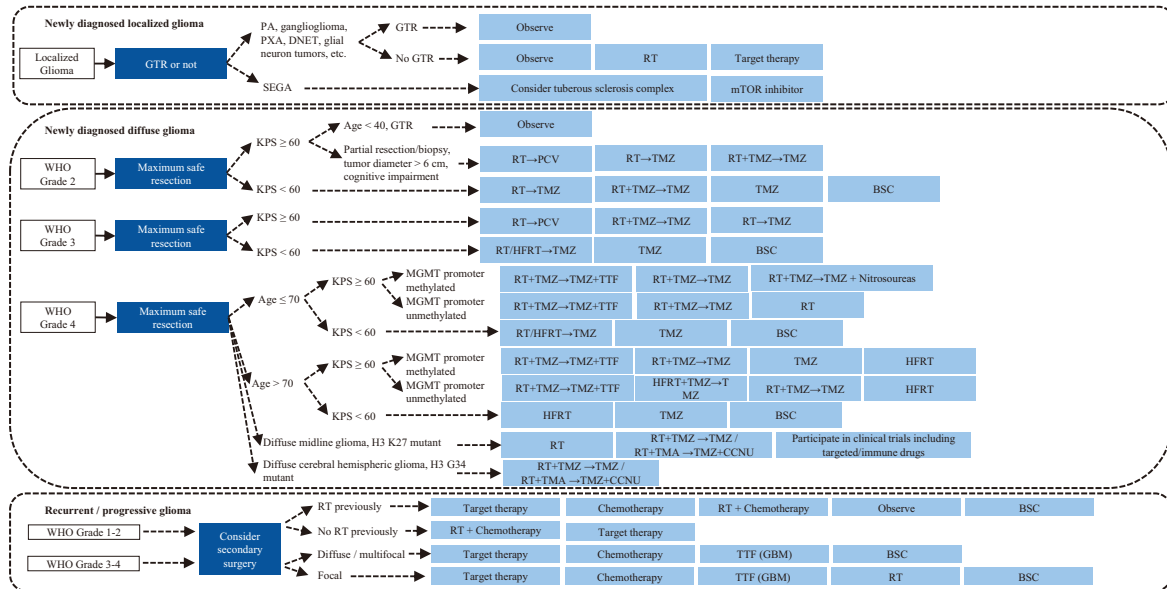
INDUSTRY OVERVIEW

Treatment Paradigm for Glioma

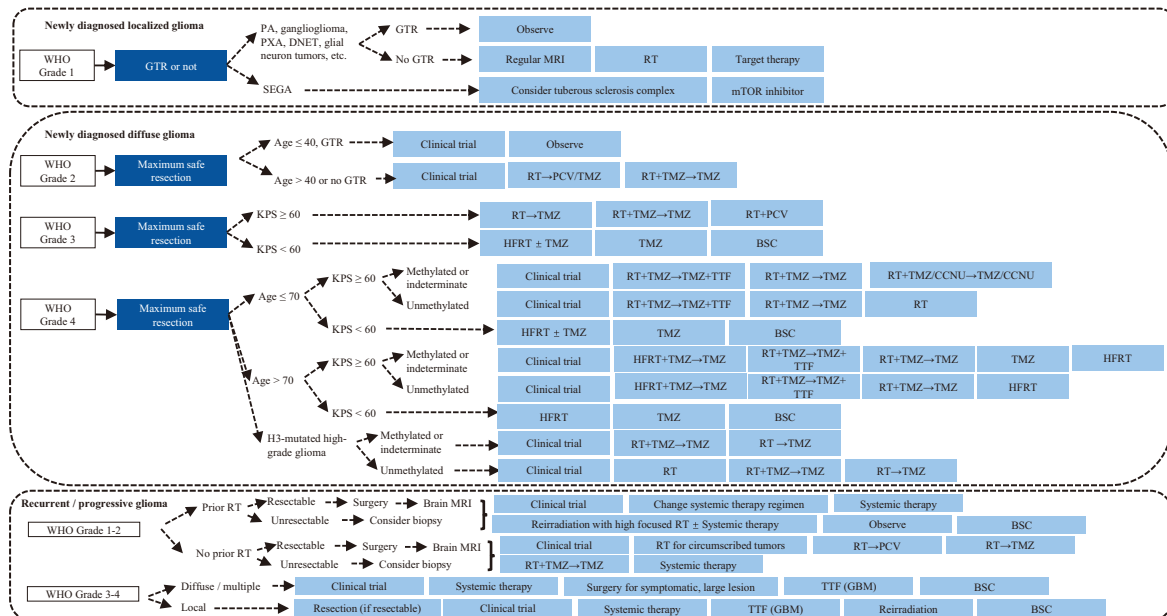
Treatment approaches for glioma are guided by tumor grade, molecular characteristics and location, although availability of therapies and clinical trial access may differ.

The charts below set forth the treatment paradigm for glioma in China and the U.S., respectively.

Treatment Paradigm for Glioma in China



Treatment Paradigm for Glioma in the U.S.



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Notes: GTR refers to gross total resection; RT refers to radiotherapy; PCV refers to procarbazine, lomustine, and vincristine regimen; TMZ refers to temozolomide; BSC refers to best supportive care; HFRT refers to hypofractionated radiotherapy; KPS refers to Karnofsky performance status; TTF refers to tumor-treating fields; PA refers to pilocytic astrocytoma; PXA refers to pleomorphic xanthoastrocytoma; DNET refers to dysembryoplastic neuroepithelial tumor; SEGA refers to subependymal giant cell astrocytoma; CCNU refers to lomustine.

Source: NCCN 2023, NCCN 2024, CACA 2024, Frost & Sullivan Report

Leveraging the potent anti-tumor effects and enhanced safety profile, our Company’s oncolytic immunotherapy candidate, MVR-C5252 is poised for second- or third-line therapy treatment of glioma.

Competitive Landscape of Oncolytic Immunotherapy for Glioma

As of the Latest Practicable Date, there were 12 approved drugs and 115 drug candidates in Phase II or later clinical stages for the treatment of glioma globally. Among the approved drugs, ten chemical agents have been approved for use across various lines of therapy, either as monotherapy or in combination. Additionally, one antibody drug has been approved specifically as a second-line monotherapy for glioma. The table below provides a summary of the competitive landscape for glioma as of the Latest Practicable Date.

Category	Number of Approved Drugs	Line of Approved Treatment	Approved Monotherapy / Combination Use	Number of Drugs in Clinical Phase II and Above	Advantage	Limitation
Chemicals	10 (6 small molecule target drugs, 4 chemotherapy drugs)	First, Second, Second or later, Third or later, Adjuvant	Mono/Combo, depends on treatment options	70	Chemotherapy: <ul style="list-style-type: none"> Standard first-line therapy Broad-spectrum anticancer activity across stages Small molecule target drugs: <ul style="list-style-type: none"> Target specific mutations, improving selectivity Some are oral drugs, improving compliance 	Chemotherapy: <ul style="list-style-type: none"> Common toxicities like myelosuppression Limited efficacy in certain subtypes Small molecule target drugs: <ul style="list-style-type: none"> Indication restricted to specific mutation carriers Resistance can develop, limiting duration of efficacy High annual cost in some drugs (Vorasidenib, Tovorafenib and the combo of Trametinib & Dabrafenib)
Antibodies	1	Second	Mono	13	<ul style="list-style-type: none"> Inhibits angiogenesis Alleviates symptoms such as cerebral oedema 	<ul style="list-style-type: none"> Mainly used in recurrence, no significant OS benefit
Oncolytic Virus	1	Second or later	Mono	5	<ul style="list-style-type: none"> Targets tumor cells with minimal harm to normal tissue Induces immune responses against tumor 	<ul style="list-style-type: none"> Requires intracranial administration, involving high procedural complexity Currently few approved drugs, limited advanced pipelines and data to substantiate their efficacy
Other Biologics	0	/	/	27	Cell therapy, ASO, gene therapy, peptides, enzyme, etc.: <ul style="list-style-type: none"> Novel mechanisms may overcome chemo/radio resistance 	<ul style="list-style-type: none"> Limited data, uncertain long-term efficacy Potential severe immune or off-target effects (e.g., cytokine release syndrome from CAR-T/TCR-T, ASO/gene therapy could bring off-target toxicity) BBB may limit effective drug delivery
Total	12			115		

Source: FDA, CDE, NMPA, Frost & Sullivan Analysis

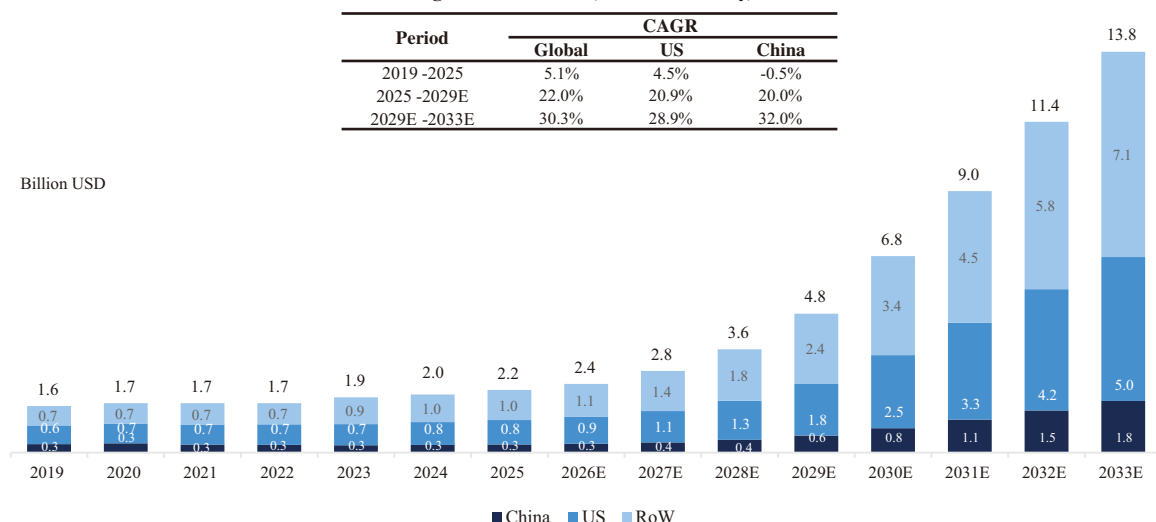
As of July 7, 2026, there was only one oncolytic immunotherapy drug, Teserpaturev/G47Δ, conditionally approved for the treatment of malignant glioma in Japan. Globally, eight oncolytic immunotherapy candidates were in Phase I/II and above development stages (including MVR-C5252) and three in Phase I clinical trials.

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Glioma Drug Market

The global glioma drug market increased from US\$1.6 billion in 2019 to US\$2.2 billion in 2025, representing a CAGR of 5.1%, which is projected to reach US\$4.8 billion by 2029 and US\$13.8 billion by 2033, representing a CAGR of 22.0% from 2025 to 2029 and 30.3% from 2029 to 2033. The chart below sets forth the historical and projected market sizes of the glioma drug markets for the periods indicated globally, in the U.S. and China.

Glioma Drug Market in China, US and Globally, 2019-2033E



Source: Annual Report, IARC, ClinicalTrials.gov, CDE, Frost & Sullivan Report

OVERVIEW OF ENGINEERED EXOSOMES

Introduction to Engineered Exosomes

Exosomes are small extracellular vesicles that are secreted by nearly all cell types, which can be broadly categorized into natural and engineered types. Natural exosomes directly from cells and their molecular cargo often reflects the characteristics of their source. Unlike natural exosomes, engineered exosomes are equipped to deliver precise functional proteins, enabling more controlled and effective therapeutic outcomes. As a payload delivery system, exosome offers several advantages over lipid nanoparticles (LNPs) and other synthetic carriers.

Feature	Exosomes	LNPs	Synthetic Nanoparticles
Sources	Natural	Synthetic	Synthetic
Membrane Penetration	Naturally crosses blood-brain barrier/cell membranes	Requires cell-penetrating peptide modification	Depends on size/surface charge
Stability	High	Moderate	Depends on coating
Immunogenicity	Low	Moderate	Moderate
Biocompatibility	High	Moderate	Variable
Targeting Ability	Natural homing/ Targeting modification	Requires ligand conjugation	Passive or active targeting
Drug Loading Efficiency	High	Moderate	Material-dependent

Source: Literature Review, Frost & Sullivan Report

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Application of Exosomes

Leveraging the biocompatibility and low immunogenicity, exosomes are widely applied in aesthetic field, as well as in areas such as regenerative medicine, drug delivery, and diagnostics, in various forms such as topical skincare serums, injectable fillers, microneedle-assisted delivery systems, and oral dietary supplements.

In aesthetic areas such as skincare, hair care, and fat reduction, exosome-based products are commonly categorized as “functional cosmetics” in international markets. Currently, most products in this space are not subject to rising approvals by authorities like the FDA or EMA. Instead, many enter the market through alternative registration pathways, such as registration under the International Nomenclature Cosmetic Ingredient (INCI) system. INCI is a globally recognized naming system used for labeling cosmetic ingredients, and registration under this system is often a prerequisite for product commercialization in major markets such as the United States, the European Union, and parts of Asia. Once an ingredient is assigned an INCI name and included in the relevant national or regional cosmetic databases, manufacturers are legally permitted to incorporate the ingredient into topical formulations for skincare and other functional aesthetic purposes, without the need for separate drug or device approvals. This pathway provides a more efficient and commercially viable route for launching exosome-based products, particularly in the beauty and wellness industries where time-to-market and consumer accessibility are the key considerations. Beyond aesthetic fields, exosomes also exhibit vast potential in clinical applications, leveraging multi-target effects in regenerative medicine and for addressing complex diseases.

Although the underlying science is still evolving, the unique properties of exosomes continue to attract significant attention worldwide. As regulatory frameworks evolve, these applications may pave the way for broader acceptance and eventual integration into mainstream consumer wellness and medicine.

Exosome Treatment Market

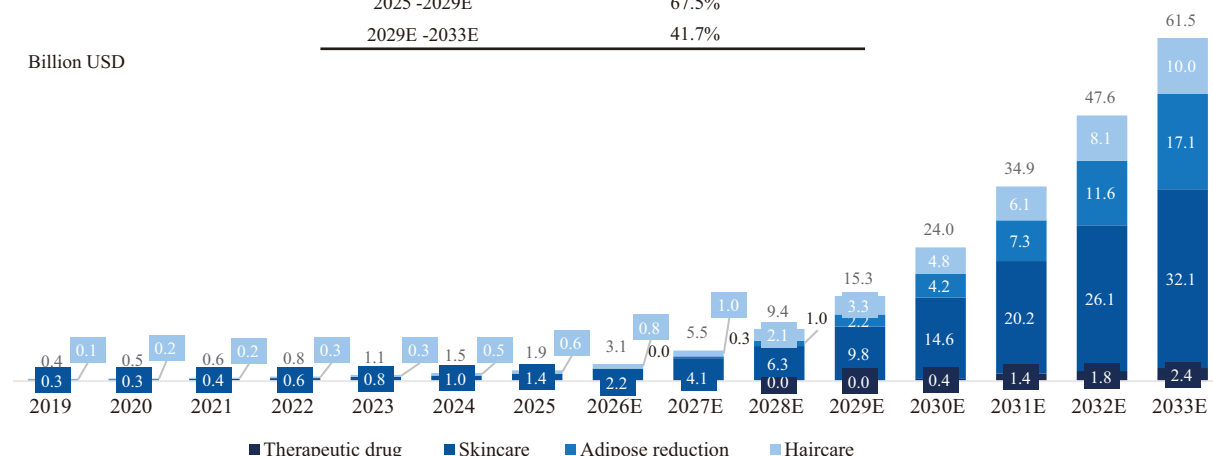
As an emerging advanced therapy, exosome-based treatments currently occupy a relatively small market. However, the unique advantages of exosomes, such as strong biocompatibility, low immunogenicity, and the ability to target various tissues, are driving growing interest. The exosome treatment market is expected to grow rapidly in the coming years. The global exosome treatment market grew from US\$0.4 billion in 2019 to US\$1.9 billion in 2025 at a CAGR of 28.6%, which is projected to reach US\$15.3 billion by 2029 and US\$61.5 billion by 2033 at a CAGR of 67.5% from 2025 to 2029 and 41.7% from 2029 to 2033, respectively. The chart below sets forth the historical and projected market sizes of the global exosome treatment market, segmented by key functional aesthetic and clinical applications over the indicated periods.

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Global Exosomes Treatment Market, 2019-2033E

Period	CAGR
2019 -2025	28.6%
2025 -2029E	67.5%
2029E -2033E	41.7%

Billion USD



Source: Annual Report, Interview with experts, Frost & Sullivan Report

Owing to their superior functional specificity, regulatory compatibility and scalable production, which enable precise cargo loading, targeted surface modification and predictable biological effects, engineered exosome therapies are expected to grow significantly faster than natural exosome therapies and progressively become the primary modality for exosome-based applications. In particular, engineered exosomes have demonstrated significant potential in consumer-oriented applications, including localized fat reduction, hair care and anti-hair loss, and skin care. Such applications are not intended for disease treatment and are not directed at specific pathological conditions. As a result, there is no clearly defined patient population, and the relevant users consist of broad segments of the general public with personal care and health management needs, rather than specific targeted patients. Together with advancements in targeted drug delivery, regenerative medicine, immuno-oncology and high-end consumer health applications such as premium skincare and hair regeneration, the engineered segment is projected to reach US\$5.4 billion by 2029 and US\$31.9 billion by 2033, representing a CAGR of 56.1% from 2029 to 2033, significantly outpacing the growth of natural exosomes. Consequently, the share of engineered exosomes in the exosome treatment market is projected to grow from 35.1% in 2029 to 51.8% by 2033.

Current Challenges of Engineered Exosomes Production

Due to the technical demands at each stage, the development of engineered exosomes faces several key challenges. Specifically, exosomes generally require ultra-low temperatures (around -80°C) to maintain their structural integrity and bioactivity, driving up both cost and operational complexity for transportation and long-term preservation. Also, maintaining consistent cell quality during large-scale expansion is difficult, and batch-to-batch variability remains a persistent issue. In addition, high-purity exosome products often require multistep downstream processes including filtration, ultrafiltration, and chromatography, which are labor-intensive and prone to product loss. As such, companies capable of achieving cost control while addressing storage, scalable production, and process reproducibility will hold a distinct competitive advantage in the exosome field.

Major Indications for Engineered Exosome Products

Skin-Related Conditions

Skin-related conditions encompass a broad spectrum, spanning from chronic wounds and acute injuries to surgical complications and intrinsic skin aging. Many of these share a common link to the skin's ability to regenerate and maintain its structural integrity. As the regenerative capacity, repair

INDUSTRY OVERVIEW

mechanisms, and overall dermal health of skin naturally decline with age, individuals over 35 have become a core demographic for skin-related treatments and products. The global population aged over 35 is remarkably large, amounting to 3.7 billion in 2025, which is projected to reach 4.0 billion by 2029 and 4.2 billion by 2033.

Functional Skincare Products Market

Functional skincare products serve as a core component in the field of skin aging and anti-aging, while acting as a supportive adjunct in the management of post-surgical, traumatic, and chronic wounds. Commonly used ingredients include well-established categories such as vitamins, peptides, acids, collagen, moisturizing agents like hyaluronic acid and ceramides, and antioxidants. In recent years, exosomes have emerged as a promising, cell-free regenerative strategy for skin-related conditions. Exosomes exert therapeutic effects by delivering functional cargo to promoting key regenerative processes including cell proliferation and migration of keratinocytes and fibroblasts, angiogenesis, immune modulation, and extracellular matrix remodeling, while limiting excessive fibrosis and scar formation.

Driven by the growing aging population and increasing awareness of skin health and preventive care across all age groups, the functional skincare products market has experienced rapid growth and is expected to maintain strong momentum in the coming years. The exosome-based functional skincare product market reached US\$1.4 billion in 2025, and is projected to increase to US\$9.8 billion by 2029 and US\$32.1 billion by 2033, with CAGRs of 63.4% from 2025 to 2029 and 34.6% from 2029 to 2033.

Alopecia

Alopecia is one of the main types of hair-related disease, which is broadly categorized into congenital and acquired types. Alopecia management follows an early, long-term, and personalized approach, progressing from general scalp-care products and home-use devices to approved pharmacologic therapies and, in advanced cases, clinical or surgical interventions.

The global burden of alopecia is substantial and continues to grow. The number of alopecia cases worldwide has reached 1,629.7 million in 2025, which is expected to increase to 1,724.2 million by 2029 and reach 1,819.1 million by 2033.

Leveraging their regenerative and intercellular signaling properties, exosomes have shown strong potential to enhance hair follicle regeneration and may serve as a differentiated bioactive component across multiple stages of the treatment paradigm. In hair restoration, exosomes promote the proliferation and differentiation of hair follicle stem cells through carrying growth factors and regulatory microRNAs that modulate activate intracellular signaling pathways and prolong the growth phase of the hair cycle. In addition, exosomes modulate the scalp's immune and vascular environment by reducing inflammation and enhancing angiogenesis, thereby improving nutrient supply, and support hair follicle repair.

Compared with traditional therapies, exosome-based treatments are minimally invasive, show high biocompatibility, and offer multi-targeted mechanisms, making them especially appealing in aesthetic medicine. Their regenerative capabilities and ease of administration contribute to higher patient compliance and satisfaction.

The alopecia treatment market has already demonstrated significant potential and is expected to continue exhibiting strong and accelerating growth. The global market size of alopecia treatment increased from US\$15.4 billion in 2019 to US\$24.4 billion in 2025, representing a CAGR of 8.0%, which is projected to reach US\$43.1 billion in 2029, representing a CAGR of 15.3% from 2025 to 2029, and further increase to US\$80.5 billion in 2033, representing a CAGR of 16.9% from 2029 to 2033. Within the alopecia treatment market, the exosome-based products accounted for approximately 2.5% in 2025, which is expected to grow significantly to 7.7% and 12.4% by 2029 and 2033, respectively.

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Localized Fat Accumulation

Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health. According to the classification standards of the World Health Organization and the U.S. National Institutes of Health, a body mass index (BMI) of 25 kg/m² or higher is considered overweight, while a BMI of 30 kg/m² or higher is classified as obesity. The population with obesity globally has increased from 753.3 million in 2019 to 1,035.7 million in 2025, which is expected to reach 1,218.7 million in 2029 and 1,396.7 million in 2033. The population with overweight globally has increased from 2.1 billion in 2019 to 2.7 billion in 2025, which is expected to reach 2.8 billion in 2029 and 3.0 billion in 2033.

Driven by the growing demand for personalized and targeted solutions that address specific problem areas, localized fat accumulation treatments, such as non-invasive body contouring and targeted lipolysis, are gaining momentum. Typically, localized fat reduction is addressed through both surgical and non-surgical approaches, many of which are regulatory-approved for specific body areas. While liposuction remains the most established option with immediate results but higher invasiveness, non-surgical modalities, such as including injectable deoxycholic acid, GLP-1 receptor agonists, offer safer, minimally invasive alternatives with gradual but targeted fat reduction.

The application of exosomes for the treatment of localized fat accumulation has become a major focus in current research and the development of functional aesthetic products. By regulating adipocyte differentiation, lipid synthesis and breakdown, and promoting the browning of white fat, exosomes demonstrate significant potential for body fat regulation, metabolic enhancement, and body contouring.

The global market size of localized adipose reduction treatment increased from US\$9.0 billion in 2019 to US\$30.6 billion in 2025, representing a CAGR of 22.7%, which is projected to reach US\$79.1 billion in 2029, representing a CAGR of 26.8% from 2025 to 2029, and further increase to US\$179.8 billion in 2033, representing a CAGR of 22.8% from 2029 to 2033. As of the Latest Practicable Date, there were no commercially available exosome-based products for localized fat accumulation treatment. With the first exosome-based product for localized fat accumulation treatment is expected to commercialize in 2026, the exosome-based products are expected to capture 2.8% and 9.5% of the localized fat accumulation treatment market by 2029 and 2033, respectively.

Pulmonary Fibrosis

Pulmonary fibrosis (PF) is a progressive and irreversible lung disease, which encompasses over 200 types of interstitial lung diseases, with idiopathic pulmonary fibrosis (IPF) being the most prevalent and severe subtype. The global incidence of IPF increased from 554.4 thousand in 2019 to 689.2 thousand in 2025, which is expected to reach 896.9 thousand in 2029 and 1,074.0 thousand in 2033. The global pulmonary fibrosis drug market increased from US\$3.6 billion in 2019 to US\$6.6 billion in 2025, representing a CAGR of 10.6%, which is projected to reach US\$8.3 billion in 2029 and US\$10.9 billion in 2033, representing a CAGR of 5.7% from 2025 to 2029 and 7.2% from 2029 to 2033. Current treatments only slow disease progression, highlighting the urgent need for more effective therapeutic strategies.

The ability to penetrate biological barriers, and inherent cell-targeting properties allow exosomes as promising candidates for the treatment of PF. Studies have demonstrated that nebulized milk-derived exosomes loaded with siTGF- β 1 can alleviate PF in mouse models by inhibiting epithelial-mesenchymal transition (EMT) and enhancing collagen degradation. Additionally, mesenchymal stem cell (MSC)-derived exosomes promote an immunosuppressive microenvironment in fibrotic lungs by inducing T regulatory cell expansion and polarization of macrophages toward an alternatively activated (M2) phenotype, further contributing to anti-fibrotic effects.

As of the Latest Practicable Date, no exosome-based drugs for pulmonary fibrosis have been approved or are in clinical stage in China or globally.

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SOURCE OF INFORMATION

We engaged Frost & Sullivan, a market research consultant, to prepare the Frost & Sullivan Report for use in this document. The information from Frost & Sullivan disclosed in this document is extracted from the Frost & Sullivan Report and is disclosed with the consent of Frost & Sullivan. In preparing the Frost & Sullivan Report, Frost & Sullivan collected and reviewed publicly available data such as government-derived information, annual reports, trade and medical journals, industry reports and other available information gathered by not-for-profit organizations as well as market data collected by conducting interviews with industry key opinion leaders.

Frost & Sullivan has exercised due care in collecting and reviewing the information so collected and independently analyzed the information, but the accuracy of the conclusions of its review largely relies on the accuracy of the information collected. We agreed to pay Frost & Sullivan a fee of US\$117.2 thousand for the preparation and update of the Frost & Sullivan Report, which is not contingent on the [REDACTED] proceeding.