Pioneering Biotechnology

I. About *Genexine*

Saving the lives through innovation

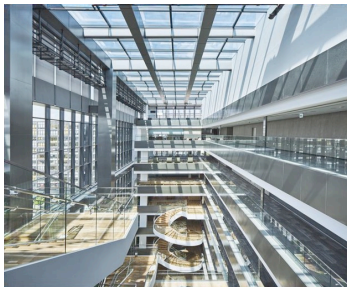
Founded by Prof. *Young-chul Sung* of *Pohang University of Science and Technology (POSTECH)* in 1999 with an ambition to be the leader in development of innovative medicines, *Genexine* is one of the first-generation *Korea*-based biotechnology companies committed to discovering and developing immunotherapies for cancer and antibody therapies for rare diseases, helping every patient live a happier and healthier life. It is now undergoing transformation to be the first *Korean* bio company to enter the North American market. With a mission to save patients' lives and improve the quality of life, *Genexine* focuses on research and development of innovative immunotherapies and next-generation antibody fusion proteins based on its core platform technologies while accelerating in discovery and development of innovative therapies.

With 22 years of history, *Genexine* is positioning itself as a global biotech company. The company has built a solid foundation for growth through rigorous internal control and managerial transparency, establishing a financial system and an independent audit system in compliance with global standards, fulfilling disclosure obligations, and providing accurate and timely information to stakeholders. Based on its strong compliance principles, *Genexine* is continuing its innovative journey to be the leader in the global biopharmaceutical industry by 2030.

Genexine's pipeline of innovative medicines is built upon two proprietary technologies, *hyFc*® and DNA vaccine platforms. *hyFc*® platform technology is used for development of long-acting protein drugs, maximizing the half-life of drugs in the human body through fusion with various drugs. *Genexine* holds the proprietary patents for *hyFc*®, and has completed trademark registration. Another platform technology of *Genexine* is its DNA vaccine platform. The platform inserts a genetic fragment involved in protein production into a vaccine, eliciting immune responses in the human body to fight viral infection and cancer cells. The advantage of this platform technology is that it can be used to develop various drugs depending on specific genes inserted. In addition, the platform uses the human immune system, and therefore, has a favorable safety profile. *hyFc*® technology was proven to be associated with fewer adverse events and higher anti-cancer activity compared to an anti-cancer drug granted FDA accelerated approval.

Genexine reported solid results including sales of KRW 18.5 billion in 2020, KRW 36.8 billion in 2021 and KRW 11.4 billion in the first half of 2022, driven by development of source technologies and license-out agreements. As a part of the company's growth strategy to be better positioned for product launches, *Neil Warma* was appointed as President & CEO and *Hyunjin Park* as Vice President, Development & Strategy Division. In May 2022, *Genexine* moved to its new headquarters, <*Genexine-ProGen Bio Innovation Park*> in *Magok*, *Seoul* to strengthen its researchers' capabilities in a more R&D-focused environment.

- **Leadership**
  - *Neil Warma*, President & CEO
  - *Jungwon Woo*, President, R&D
- **Location**
  Headquarters: *Magok-dong, Gangeso-gu, Seoul*
  No. of employees: 127 (as of September 2022) including 72 researchers (57%)
- **Revenue:** KRW36.8 billion (FY 2021)
- **Website:**
  http://www.genexine.com/



II. History

Since its founding in 1999, *Genexine* has been committed to discovery and development of immunotherapies for cancer and antibody therapies for rare diseases. *Genexine* has worked with the Korean government and formed partnerships with more than 11 global pharmaceutical companies for development of next-generation therapies as a part of its open innovation strategy. Study results continue to demonstrate *Genexine's* R&D capabilities. In early 2022, *Genexine* appointed a pharmaceutical industry veteran as President & CEO to accelerate its growth as a global biotechnology company.

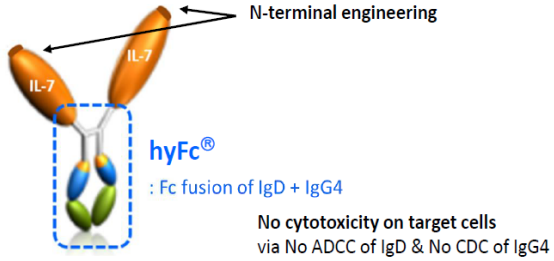
History and R&D Milestones		
Genexine was established as a venture business of *POSTECH*	**1999**	
Listed on *KOSDAQ*	**2009**	
The Beginning of Open Innovation with Global Pharmaceutical Companies		
Announced phase 2 clinical trial results of growth hormone deficiency candidate *GX-H9* conducted in *Europe* and *Korea* at the *50th Annual Meeting of the Japanese Society for Pediatric Endocrinology (JSPE)* in *Tokyo* Formed a partnership with *MSD* for clinical trials of HPV therapeutic vaccine *GX-188E*	**2016**	Signed a license-out agreement for *GX-I7* with *NeoImmuneTech*
Granted *Innovative Pharmaceutical Company certification* Selected as *Brain Power Company (K-Brain Power)*	**2017**	Granted approval to initiate a phase 1b/2 clinical trial of HPV therapeutic vaccine *GX-188E by MFDS(Ministry of Food and Drug Safety)* Signed licensing agreement for *GX-I7* with *I-Mab Biopharma*
Received the *Korean Association of Immunology's* appreciation plaque for IVI	**2018**	Granted approval to initiate a phase 1b/2a clinical trial of *HyLeukin-7* in combination with immune checkpoint inhibitor in patients with triple negative breast cancer by *MFDS* Signed an agreement with *Roche* and *NIT* to develop combination therapy of *HyLeukin-7* and immune checkpoint Inhibitor Expanded and entered stage 3 of a phase 2 clinical trial of *GX-188E* *GX-I7* selected for *Korea Drug Development Fund (KDDF) Project*
Received Excellent Laboratory for Safety Management Certification Held groundbreaking ceremony for new headquarters and R&D center in *Magok*	**2019**	Expanded and entered stage 3 of a phase 2 clinical trial of *GX-188E*
Awarded for sincere tax payment by *Gyeonggi Province* in 2020 *GX-188E* selected for the first round of *MFDS'* Bio Challenger Fund	**2020**	Granted authorization for a multinational phase 3 clinical trial of *GX-E4* in 7 countries in *Asia* and *Oceania* Granted approval to initiate a phase 3 clinical trial of *GX-H9* in *China* Results of a clinical trial of *GX-188E* published at the world's leading clinical oncology journal *'The Lancet Oncology'*

Move to Magok Headquarters and Transformation into a Global Biopharma Company

Signed a license-out agreement for *GX-I7* with *KG Bio* *EMA* orphan drug designation of *GX-H9*	**2021**	Selected for oral presentation on phase 2 study of HPV therapeutic vaccine DNA vaccine *GX-188E* in combination with *Keytruda* at *American Society of Clinical Oncology (ASCO)*
Selected for oral presentation on phase 2 study of HPV therapeutic vaccine *GX-188E* at *European Society for Medical Oncology (ESMO) Congress 2022* Phase 2 clinical trial completion, CSR announcement	**2022**	Granted pre-approval for *GX-E4* in *Indonesia* Completed enrollment for a clinical trial of *GX-H9* in *China* Appointed *Neil Warma* as CEO and *Hyun-jin Park* as Vice President New headquarters and R&D center opened in *Magok*

III. Key Platform Technologies

hyFc® for Development of Long-acting Protein Drugs



Genexine's industry-leading proprietary technologies include *hyFc*® , a platform technology that maximizes the half-life of drugs in the human body through fusion with various drugs. It is currently used for development of long-acting protein drugs.

Unlike the existing laboratory-made long-acting technology, *Genexine's* platform uses natural proteins without any genetic mutations to maximize drug stability. It has great potential in terms of expanding the range of products since it is easily applicable to various drugs. With *hyFc*®, antibodies can use cells in the blood vessels as a repository, allowing the drug to spread slowly and therefore stays in the human body for a longer period with sustained therapeutic effects.

In addition, the technology uses *IgD* with the highest hinge flexibility to minimize interferences and maintain high drug activity. The binding of *IgD* and *IgG4* antibodies in their natural form minimizes immune adverse events and cytotoxicity, increasing the chance of developing a safe and stable drug. Leveraging antibodies that last long in the body, it is possible to develop a drug administered once weekly or monthly.

Most of protein drugs currently on the market are dissolved quickly in the body, requiring patients to receive an injection frequently or daily. If a protein drug stays longer in the body, the frequency of injections would be reduced significantly, increasing convenience and the quality of life for patients. *GX-H9*, a drug candidate for the treatment of growth hormone deficiency, is being co-developed by *Genexine* and *Handok* as weekly or bi-weekly dosing regimen. Unlike existing drugs administered daily, the platform can increase convenience and efficacy significantly.

Genexine holds the proprietary patents for *hyFc*®, and has completed trademark registration.

Drug Candidates Currently Developed with *hyFc*® Technology

First-in-Class		Best-in-Class	
GX-I7	**Cancer immunotherapy**	***GX-H9***	**Treatment for growth hormone deficiency**
GX-P1	**Immuno-depressant**	***GX-E4***	**Treatment for chronic kidney disease-induced anemia**

DNA Vaccine – Oncology and Infection Prevention

In DNA vaccines, plasmid DNA vectors are inserted with specific genetic fragments that produce a disease-causing protein after viral infection, inducing immune responses in the human body to fight viral infections and cancer. The term 'DNA vaccine' roots from its use of DNA to provide vaccine-like protection in treat patients

A significant advantage of DNA vaccines is that various drugs can be developed depending on genetic fragments, and they represent a safe treatment option associated with fewer side effects compared to other types of anti-cancer drugs as their mechanism of action involves the human immune system.

Genexine is currently developing *GX-188E* for the treatment of cervical cancer and head and neck cancer.

DNA Vaccine Candidates

First-in-Class	
GX-188E	**Cervical cancer vaccine**

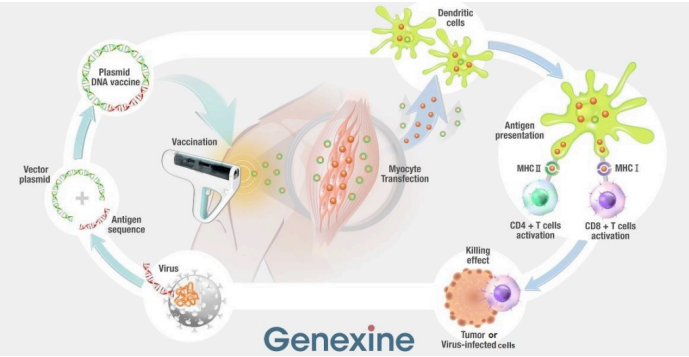
IV. Business Areas and Pipeline

Genexine is committed to discovering and developing life-saving innovative medicines with focus on its future pipeline of First-in-Class, Best-in-Class. For the last 23 years, *Genexine* built a strong pipeline of innovative compounds, and is now working on commercialization of four key drug candidates. As a *Korea*-based biotechnology company expanding to the global stage, *Genexine* has formed license-out agreements with global partners to co-develop innovative treatments and expand its pipeline in a highly efficient and cost-effective way. Backed by future growth engines including next-generation cell therapies and personalized cancer vaccines, *Genexine* is now in transition to become a global biotechnology company.

Genexine's business strategy includes key drug candidates. Of an array of promising new drug candidates, *Genexine* has selected four key candidate pipelines – cervical cancer DNA vaccine *(GX-188E),* lymphopenia treatment *(GX-I7),* growth hormone deficiency treatment *(GX-H9),* and chronic renal disease-induced anemia treatment *(GX-E4).* All are candidates with the highest commercialization potential backed by phase 2 or 3 clinical trial results.

Genexine has worked closely with global partners to conduct clinical trials of oncology drugs and combination therapies and presented positive results from the trials at numerous stages of scientific academies. Such activities have heightened expectations of the potential market size and technology commercialization for innovative cancer immunotherapies.

GX-188E (FIDVAXI): HPV Vaccine



Genexine is developing *GX-188E*, a therapeutic DNA vaccine for cervical cancer, to target Human Papillomavirus (HPV), which is the main cause of cervical cancer. *Genexine* has completed phase 2 trials and is now preparing for a multinational phase 3 clinical trial.

GX-188E is developed by inserting genes which produce E4 and E6 into plasmid DNA. E4 and E6 play a key role in causing cancer in people infected with HPV types 16 and 18. When administered into the human body with an electroporation technique, the therapeutic DNA vaccine activates the immune system which is specific to E4/E6 protein antigens, effectively eliminating cancer cells with few side effects.

The results of a phase 2 study conducted to evaluate the use of *GX-188E* in combination with *Keytruda* (pembrolizumab, an immune checkpoint inhibitor) showed an objective response rate of 31.7% (complete remission: 10%), progression-free survival (PFS) of 4.4 months, and overall survival of 16.7 months. Clinical trial results showed superior therapeutic effects compared to *Keytruda* monotherapy, which was granted the FDA's expedited authorization, and 'G' company's *ADC* drug. Such suggests that *Genexine's GX-188E* could be the first DNA cancer vaccine that meets both the safety profile of repeated administration and the protection and strengthening of the immune system.

Genexine made an oral presentation at the *European Society of Medical Oncology Congress 2022* for its phase 2 clinical trial conducted involving patients with relapsed cervical cancer who do not respond to the existing chemotherapy. The trial was complete in December of 2022.

Genexine's GX-188E cervical cancer DNA treatment vaccine was designated as an advanced biopharmaceutical drug for *Fast Track Designation (FTD)* by the *Ministry of Food and Drug Safety* in January 2023. In addition, *Genexine* plans to submit for conditional approval to the *MFDS.* If granted authorization, *Genexine* believes *GX-188E* could be a new treatment option to more than 60,000 patients with cervical cancer in *Korea* in 2023.

GX-I7 (*efineptakin alfa*): The Only T-Cell Amplifier Cancer Immunotherapy

GX-I7(*efineptakin alfa*) is a *hyFc®* long-acting recombinant *human IL-7* which plays an essential role in the development of lymphocytes which are a part of the immune system. *GX-I7* is being developed as a lymphopenia treatment based on *Genexine's hyFc®* platform technology and therefore holds a stable mechanism of action. Being the only T-cell amplifier cancer immunotherapy in the world, the use of *GX-I7* in combination with various cancer treatments is now being evaluated in clinical trials in many countries including *Korea* and the *U.S.*

GX-I7 has great potential in terms of market expansion. Currently, there are no authorized treatments for lymphopenia, which is why *Genexine* expects *GX-I7* to be positioned as a next-generation blockbuster drug in the oncology market, being the first-in-class innovative drug and the only treatment for lymphopenia.

Genexine has embarked on a global development program to evaluate *GX-I7* in multiple cancers with its partners, *NeoImmune Tech* in the *U.S., KG Bio* in *Indonesia* and *I-Mab* in *China*

The company is conducting a phase 2 trial of *GX-I7* in combination with *Merck's Keytruda* in patients with triple-negative breast cancer, a phase 2 trial in combination with *Roche's Avastin* in patients with glioblastoma (GBM) as well as a phase 2 trial of *Genexine's* DNA vaccine *GX-188E* in combination with *BMS Ono's Opdivo* in patients with head and neck cancer.

GX-H9: Long-acting Treatment for Growth Hormone Deficiency

GX-H9 is in development based on *Genexine's hyFc®* platform for the treatment of growth hormone deficiency. With the advantage of the platform – allowing a protein drug to stay longer in the body – the frequency of growth hormone injections would be reduced significantly, increasing convenience and the quality of life for patients.

GX-H9 is a Best-in-Class drug candidate being co-developed with *Handok* under a strategic partnership.

GX-E4: Long-acting Treatment for Chronic Renal Disease-Induced Anemia

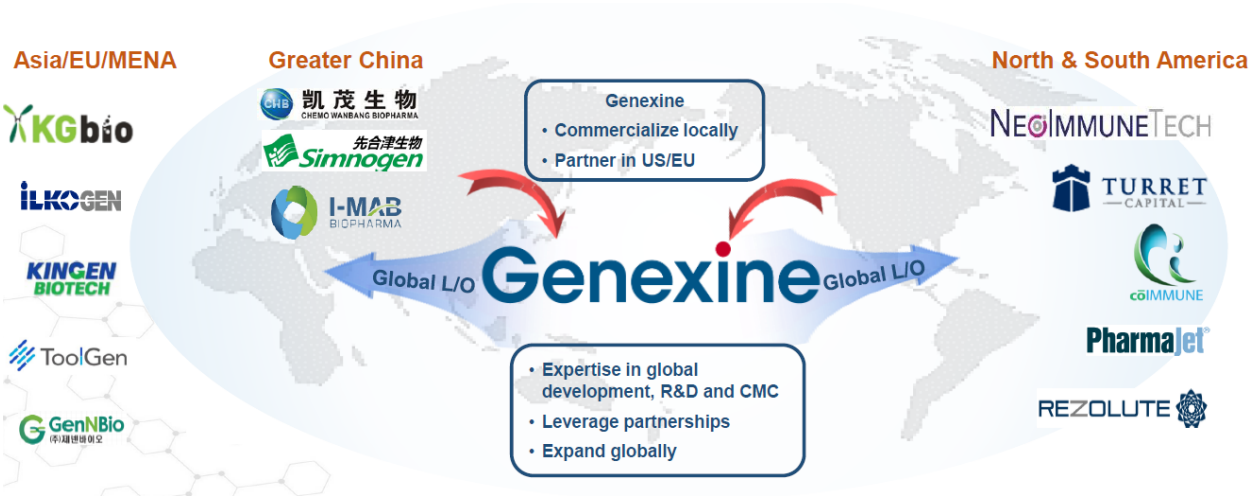
Built upon our *hyFc®* platform, *GX-E4* is a drug candidate in development for the treatment of chronic renal disease-induced anemia. It is a treatment for long-acting erythropoietin with significant potential in terms of sustainability, efficacy, safety and price competitiveness.

A phase 3 study of *GX-E4* launched in seven *Southeast Asian* countries including *Indonesia, Taiwan, Australia, Malaysia, the Philippines* and *Thailand* in *March* 2020. *Genexine* plans for regulatory submissions for *GX-E4* as a treatment of chronic renal disease-induced anemia in *Indonesia* in the first half of 2023.

Genexine's Pipeline

Pipeline	Indication	Clinical Trial Phase			Developer	Partners
		Phase 1	Phase 2	Phase 3		
GX-E4	CKD induced anemia	Completed Phase 2, *Korea*		In Phase 3, *Asia*	*Genexine* *KG Bio* *CWB*	KGbio 凱茂生物 CHEMO WANBANG BIOPHARMA
GX-H9	Adult growth hormone deficiency	Completed Phase 2, *Korea* and *EU*		In Phase 3, *China*	*Genexine/* *Handok* *I-Mab*	HANDOK I-MAB BIOPHARMA
	Pediatric growth hormone deficiency	Completed Phase 2, *Korea* and *EU*			*Genexine/* *Handok*	HANDOK
GX-I7	Solid tumors including triple negative breast cancer (TNBC), Glioblastoma (GBM), skin cancer, colorectal cancer and renal cell carcinoma	In Phase 1~2, *Korea, the U.S.* and *China*			*Genexine* *I-Mab* *NeoImmune Tech*	MERCK Roche I-MAB BIOPHARMA NEOIMMUNETECH
GX-188E	Progressive cervical cancer	Completed Phase 2, *Korea*			*Genexine*	MERCK
GX-P1	Autoimmune disease Organ transplant patients	In Phase 1, *Korea*			*Genexine*	GenNBio (주)젠넨바이오 TURRET CAPITAL
GX-G3	Neutropenia	Completed Phase 2, *Korea*			*ILKOGEN* *I-Mab*	I-MAB BIOPHARMA

V. Open Innovation



[Clinical data/ Milestones/ Royalties/ Shareholder value]
[Process development & manufacturing/ Pre-clinical data/ Early clinical data/ License-out/ Clinical data]

"Open innovation" has been an important part of *Genexine's* global business strategy since 2017, utilized for the development of next-generation drugs. *Genexine* has explored its path toward open innovation with partners in countries around the world, including *NeoImmuneTech, KG Bio and I-Mab Biopharma*. With open innovation, *Genexine* increases its value with license-out agreements and strategic investments while saving R&D costs with shared clinical data.

Genexine's open innovation strategy helps sharpen the company's competitive edge on the global stage. In 2021, *Genexine* conducted a total 25 clinical trials, expanding global clinical trials and sharing data with global partners. This figure represents a 3.5-fold increase compared to 2015 and reflects *Genexine's* ongoing commitments to developing and commercializing next-generation innovative drugs. Of the 25 clinical trials, 19 are being conducted with partners. *Genexine* has also reduced the financial burden of clinical development program significantly. *Genexine's* annual R&D spending has been around KRW 40 billion since 2017 as its global clinical development strategy continues to help increase efficiency while reducing costs.

Leading open innovation projects include phase 1 and 2 clinical trials of *GX-I7*, which is an immune-oncology drug candidate involved in production of lymphocytes and amplification of T-cells, currently conducted in *Korea, the U.S.* and *China. GX-17* is being co-developed with *I-Mab, NeoImmuneTech and KG Bio,* and under the open innovation partnership, *Genexine* has increased T-cell count to 50 times, which is the highest among cancer immunotherapy candidates so far. *Genexine* is also conducting phase 3 trials of *GX-H9* for the treatment of growth hormone deficiency and *GX-E4* for the treatment of chronic renal disease-induced anemia in partnership with global pharmaceutical companies.

The strategic partnerships with global partners have led to positive results in clinical trials, further increasing the chance of commercializing *Genexine's* promising compounds and helping patients in need. Driven by the advances made with *Genexine's* differentiated technology and clinical know-how, including the successful development of the K-Bio's first blockbuster oncology drug and the first DNA-based cancer vaccine, *Genexine* is now focusing on developing two First-In-Class products. *Genexine* also aims to launch two Best-in-Class "biobetter" products by commercializing the promising candidates which are now in phase 3 clinical trials with global partners in countries around the world.