

# **UAE Animal Biotechnology Market By Product (Diagnostics, Biologics, Drugs, Reproductive And Genetic, Nutrition), By Application (Diagnosis of Animal Diseases, Treatment of Animal Diseases, Preventive Care of Animals, Product Research & Development, Others), By Animal Type (Companion, Livestock), By End Use (Laboratories, Point-of-care testing/In-house testing, Veterinary Hospitals & Clinics, Others), By Region, Competition, Forecast and Opportunities, 2020-2030F**

<https://marketpublishers.com/r/UB7AC9B9248EEN.html>

Date: January 2025

Pages: 82

Price: US\$ 3,500.00 (Single User License)

ID: UB7AC9B9248EEN

## **Abstracts**

UAE Animal Biotechnology Market was valued at USD 148.57 Million in 2024 and is expected to reach USD 233.96 Million with a CAGR of 7.82% through 2030.

The UAE Animal Biotechnology Market is experiencing substantial growth, driven by advancements in biotechnology, increased awareness of animal health, and growing demand for food security. The market encompasses various applications, including genetic engineering, diagnostics, and biopharmaceuticals, with a strong focus on improving livestock productivity, disease resistance, and overall animal welfare. The government's support for research and development, coupled with rising investments in the agricultural and veterinary sectors, is fueling market expansion. Moreover, the UAE's strategic location as a trade hub in the Middle East is facilitating the introduction of innovative biotechnologies and creating opportunities for collaboration between regional and international stakeholders. The country's emphasis on enhancing agricultural productivity through biotechnology is essential in ensuring food security,

especially in light of climate challenges. Genetic modification techniques are being increasingly applied to improve traits such as disease resistance, growth rates, and feed efficiency in livestock, contributing to enhanced sustainability in the animal agriculture sector. Veterinary biotechnology, focusing on diagnostics and therapeutic vaccines, is another significant area of growth, addressing emerging diseases and providing better management of animal health.

Additionally, the UAE's focus on sustainability and reducing environmental impacts is encouraging the adoption of biotechnological solutions in animal farming. The market's potential is also bolstered by the growing demand for biopharmaceuticals, animal-derived products, and genetic services, with major players focusing on research and strategic collaborations to introduce cutting-edge technologies. However, regulatory challenges, including the need for proper oversight of biotechnology applications and ethical considerations, remain significant factors that may shape the market's future trajectory.

## Key Market Drivers

### Rising Demand for Sustainable Agriculture Practices

Sustainability in agriculture has become a key global trend, and the UAE is aligning itself with these practices to address local challenges such as water scarcity, land degradation, and climate change. Biotechnology offers sustainable solutions to these pressing issues. In the context of animal farming, biotechnology can provide tools to improve the efficiency of resource use, reduce emissions, and enhance livestock productivity. Technologies such as genetically modified organisms (GMOs) can improve disease resistance and feed conversion ratios, enabling livestock to thrive with fewer resources. Moreover, innovations like drought-resistant animal breeds are helping to mitigate the impact of the region's arid climate on agriculture. By enhancing animal productivity while minimizing the use of resources, animal biotechnology plays a pivotal role in making the UAE's agricultural sector more sustainable. Additionally, the adoption of sustainable biotechnology in animal farming is helping to reduce environmental footprints, such as water usage and methane emissions, thus promoting a greener agricultural industry. With the UAE's commitment to sustainability in line with its Vision 2021, biotechnology is seen as a vital solution to ensure that agricultural practices are both productive and environmentally responsible.

### Government Support and Investments in R&D

The UAE government has been instrumental in advancing the animal biotechnology market by prioritizing the sector within its broader economic development plans. The government has recognized the importance of biotechnology for enhancing agricultural sustainability and food security, leading to substantial investments in research and development (R&D). These investments are channeled into areas such as genetic engineering, disease prevention, and livestock management, all of which are key components of animal biotechnology. On 14 September 2022, Arab Health reaffirmed its role as a central hub for healthcare trade, securing AED 2.8 billion in healthcare-related contracts, as reported by the GRS Explori Exhibitor Survey conducted during the 2022 edition, held in Dubai in January. The exhibition plays a vital role in supporting UAE Government initiatives such as 'Make it in the Emirates,' a platform aimed at developing the UAE's industrial sector and strengthening its contribution to the national economy. This initiative focuses on 11 priority sectors, including pharmaceuticals and medical technology.

The UAE's vision for 2030, which includes a focus on innovation and sustainable practices, has encouraged the establishment of research centers dedicated to biotechnology. Furthermore, the government's collaboration with international biotech firms and universities has enhanced local research capabilities, fostering innovation in areas like gene editing and animal health management. This government-led initiative aims to reduce reliance on food imports by improving local food production, which benefits both the agricultural and biotechnology sectors. The growing support for R&D is crucial for the market's growth, as it ensures the continuous development and application of cutting-edge technologies, which will further drive the UAE's position as a global hub for biotechnology innovation.

### Increased Focus on Food Security

Food security is a critical concern for the UAE, given its heavy reliance on food imports. In response to this vulnerability, the government has made food security a national priority, placing animal biotechnology at the heart of its agricultural strategies. By leveraging biotechnological innovations, such as genetically modified animals and precision farming technologies, the UAE aims to enhance domestic food production, reduce dependency on imports, and ensure a stable supply of high-quality animal products. On September 20-21, 2023, SGS participated in the 5th Annual Future Food Forum held at the Le Meridien Dubai Hotel and Conference Centre, Dubai, UAE. The event, organized by the UAE Food & Beverage Manufacturers Group, centered on sustainability, reflecting the growing consumer demand for healthier alternatives in their diets. SGS's enhanced focus on sustainability positions the company to offer tailored

solutions for the food and beverage industry, aligning with current market trends. As part of its continuous efforts to enhance food safety in the emirate, the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA) conducted over 103,000 inspection visits in 2023, covering all food establishments across the emirate. These inspections led to the identification of 3,391 violations and the issuance of 27,895 warnings. Abu Dhabi City accounted for more than half of the total inspections, with approximately 63,690 visits, followed by Al Ain City with 29,583 visits, and the Al Dhafra Region, which saw 9,998 visits. Genetically modified livestock, for example, can be bred for better disease resistance, faster growth rates, and improved feed efficiency, all of which contribute to higher yields and lower production costs. Furthermore, biotechnology enables the development of animals that are more adaptable to the harsh local climate, improving their survival and productivity in arid conditions. As food security remains a top concern, animal biotechnology presents a viable solution to improve the efficiency and resilience of local agricultural systems, making the UAE less dependent on global supply chains and better equipped to face future challenges related to food production.

### Technological Advancements in Genetic Engineering

Technological advancements in genetic engineering are transforming the animal biotechnology sector in the UAE. Technologies like CRISPR gene editing have made it possible to precisely modify the genetic makeup of animals, leading to significant improvements in traits such as disease resistance, growth rates, and reproductive efficiency. These innovations have the potential to revolutionize animal farming by producing healthier, more productive livestock while minimizing the use of chemicals and other inputs. For instance, gene editing can help create animals that are resistant to common diseases, reducing the need for antibiotics and improving the overall health of the livestock. Moreover, genetic engineering can help optimize the growth rates of animals, enabling farmers to meet the growing demand for animal products more efficiently. The UAE is at the forefront of adopting these technologies, with several biotech firms and research institutions actively involved in genetic engineering research. The growing focus on innovation and the rapid advancement of genetic technologies in the UAE provide significant opportunities for the animal biotechnology market to thrive, especially as the country aims to establish itself as a global leader in biotech-driven agricultural solutions.

### Key Market Challenges

### Regulatory Challenges and Ethical Concerns

One of the key challenges facing the UAE Animal Biotechnology Market is the complex regulatory landscape and ethical concerns surrounding the use of biotechnology in animal farming. The rapid advancements in genetic engineering, gene editing, and other biotechnological innovations have outpaced the development of appropriate regulatory frameworks. While biotechnology has the potential to revolutionize the agricultural sector, ensuring that the technologies are safe, ethical, and beneficial to consumers remains a major concern. Regulatory bodies must establish guidelines that balance innovation with safety, addressing potential risks such as unintended ecological consequences or animal welfare concerns.

In the UAE, the regulatory environment for biotechnology is still evolving. Regulatory bodies must adapt quickly to keep up with new developments in genetic engineering, including the approval of genetically modified (GM) animals, gene-edited livestock, and new veterinary biotechnologies. These technologies can potentially improve productivity and sustainability, but their approval and use require stringent oversight to ensure that they do not pose risks to public health or the environment. Additionally, there is growing concern among consumers about the ethical implications of biotechnological interventions in animals. The use of genetic modification and cloning technologies, in particular, raises questions about the treatment of animals, with critics arguing that these technologies may compromise animal welfare.

### High Research and Development Costs

Another significant challenge for the UAE Animal Biotechnology Market is the high cost associated with research and development (R&D). The biotechnology industry, particularly in the animal sector, requires substantial financial investment to develop new technologies and bring them to market. The process of developing genetically modified organisms (GMOs), vaccines, or other biotech-based solutions involves extensive research, experimentation, and regulatory approval processes, all of which require significant capital. While the UAE government has been making efforts to promote R&D in the biotechnology sector, private companies still face financial barriers. The high cost of conducting trials, obtaining regulatory approvals, and scaling up production makes it difficult for smaller firms to compete with larger multinational companies that have access to more substantial resources. This financial strain can stifle innovation and slow the development of new solutions in areas such as disease prevention, genetic enhancement, and animal welfare.

Additionally, the highly specialized nature of biotechnology means that the UAE needs to invest in highly skilled personnel, infrastructure, and advanced laboratory facilities.



The lack of a mature local workforce with expertise in biotechnology and genetic engineering further complicates the situation. Companies must either hire foreign talent or invest heavily in training their workforce, which adds another layer of expense to the R&D process.

## Key Market Trends

### Veterinary Biotechnology Advancements

Veterinary biotechnology is an essential component of the UAE's animal biotechnology sector, as it focuses on improving animal health and welfare. The development of advanced diagnostic tools, vaccines, and therapeutic treatments for livestock diseases has become increasingly important in ensuring healthy and productive animals. Biotechnology offers precise solutions for early disease detection, enabling farmers to identify and treat diseases before they spread. Vaccines, in particular, play a vital role in preventing disease outbreaks that can severely impact animal populations and disrupt food supply chains. Additionally, therapeutic biotech products can be used to treat a variety of conditions, from infections to genetic disorders, thereby improving the overall health and longevity of livestock. As the UAE continues to expand its focus on animal health, veterinary biotechnology is increasingly seen as a crucial sector for ensuring food safety and animal welfare. The UAE government has supported initiatives aimed at improving veterinary care and disease management, which, in turn, is driving the demand for veterinary biotech solutions. The rapid advancements in diagnostic technologies, coupled with the increasing emphasis on livestock health, are likely to accelerate the growth of veterinary biotechnology in the UAE, supporting the broader animal biotechnology market.

### Rise in Animal-derived Biopharmaceuticals

The demand for animal-derived biopharmaceuticals is on the rise, which is positively impacting the UAE Animal Biotechnology Market. Animal biopharmaceuticals, such as vaccines, growth hormones, and other therapeutic products, are critical for improving livestock productivity, preventing diseases, and enhancing animal health. The UAE, with its advanced healthcare infrastructure and commitment to technological advancements, is positioning itself as a key market for the development and commercialization of animal-derived biopharmaceuticals. The use of biopharmaceuticals in livestock farming can significantly increase productivity by preventing diseases that otherwise reduce the efficiency of animal production. Vaccines developed through biotechnology have been particularly effective in preventing diseases that can decimate entire animal populations,

ensuring a stable and reliable food supply. Additionally, biopharmaceuticals such as growth hormones and enzymes are enhancing the growth and efficiency of livestock, leading to faster production cycles and higher yields. As the UAE's agricultural sector grows, the increasing adoption of animal-derived biopharmaceuticals will contribute significantly to the market's expansion by improving the quality and efficiency of livestock farming.

## Segmental Insights

### Application Insights

Based on the Application, Diagnosis of Animal Diseases is currently the dominating segment. The increasing emphasis on animal health and food safety has driven the demand for advanced diagnostic tools and techniques. Diagnostics play a pivotal role in ensuring that animals are free from diseases, especially those that could pose a risk to public health and food security. As the UAE aims to maintain high standards in animal farming and food production, the importance of early detection and accurate diagnosis of animal diseases has become crucial. The demand for diagnostic solutions, such as molecular diagnostics, pathogen detection, and genetic testing, has surged as the region seeks to safeguard its livestock, poultry, and other animals from outbreaks of infectious diseases, including zoonotic ones.

The rise in consumer awareness regarding the quality and safety of animal products has further fueled the demand for precise diagnostics. Consumers are increasingly concerned about the health of the animals from which their food is derived, leading to a greater focus on disease-free, ethically raised livestock. Additionally, the UAE government has implemented stricter regulations and biosecurity measures in the agricultural and veterinary sectors, further driving the need for diagnostic applications. As a result, the Diagnosis of Animal Diseases segment is expected to continue dominating the UAE Animal Biotechnology Market, supporting efforts to improve animal health, food safety, and overall public health standards.

### Animal Type Insights

Based on the Animal Type, in the UAE Animal Biotechnology Market, Livestock is currently the dominating segment. The country's agricultural and food security priorities heavily focus on livestock, including cattle, sheep, goats, and poultry, due to their importance in food production and the growing demand for high-quality animal products. Biotechnology plays a crucial role in improving livestock productivity, disease

management, and overall animal health, which directly impacts the food supply chain. Livestock biotechnology solutions, including genetic testing, reproductive technologies, and disease diagnostics, are vital to enhancing the efficiency and sustainability of animal farming. With increasing consumer demand for high-quality meat, milk, and other animal products, livestock farmers are increasingly adopting advanced biotechnologies to ensure the health of their animals and meet market demands for disease-free, hormone-free, and antibiotic-free products.

Moreover, the UAE government's focus on food security and self-sufficiency has led to substantial investments in livestock farming and biotechnology. These investments are geared toward improving productivity, optimizing breeding programs, and enhancing disease prevention and control mechanisms. Biotechnology solutions also help in tackling challenges such as heat stress, water scarcity, and limited feed resources, which are particularly relevant to livestock farming in the UAE's harsh climate.

## Regional Insights

The Abu Dhabi is currently the most dominating region in the UAE Animal Biotechnology Market. As the capital and largest emirate, Abu Dhabi plays a central role in the country's agricultural and food security strategies. The government's initiatives to boost food production, enhance animal health, and promote biotechnology innovation are particularly focused in this region. Abu Dhabi's strategic location and investment in advanced technologies, including biotechnology, have positioned it as the key player in the animal biotechnology sector. The emirate is home to several research institutions, agricultural development programs, and biotechnology companies, all working towards improving livestock farming, veterinary services, and the overall quality of animal products. These initiatives are aligned with Abu Dhabi's vision of achieving greater food security and reducing dependency on food imports, especially in the context of livestock and animal-derived products.

The Abu Dhabi government has also been actively investing in large-scale livestock projects and biosecurity measures, which further drive the adoption of animal biotechnology solutions. This includes investments in genetic research, disease prevention technologies, and animal health management, all of which are crucial to ensuring the production of high-quality and disease-free animal products. Moreover, Abu Dhabi's efforts to become a leader in agricultural technology and sustainability, particularly through the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA), have reinforced its position as the dominant region in the UAE Animal Biotechnology Market. These factors collectively contribute to Abu Dhabi's continued leadership in the



market.

### Key Market Players

Boehringer Ingelheim International GmbH

Biogenesis Bago

Merck & Co Inc

Virbac SA

Elanco Animal Health Inc

Mars Incorporated

### Report Scope:

In this report, the UAE Animal Biotechnology Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

UAE Animal Biotechnology Market, By Product:

Diagnostics

Biologics

Drugs

Reproductive And Genetic

Nutrition

UAE Animal Biotechnology Market, By Application:

Diagnosis of Animal Diseases

Treatment of Animal Diseases

Preventive Care of Animals

Product Research & Development

Others

UAE Animal Biotechnology Market, By Animal Type:

Companion

Livestock

UAE Animal Biotechnology Market, By End Use:

Laboratories

Point-of-care testing/In-house testing

Veterinary Hospitals & Clinics

Others

UAE Animal Biotechnology Market, By Region:

Abu Dhabi

Dubai

Sharjah

Rest of UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies presents in the UAE Animal Biotechnology Market.

*UAE Animal Biotechnology Market By Product (Diagnostics, Biologics, Drugs, Reproductive And Genetic, Nutrition...*

#### Available Customizations:

UAE Animal Biotechnology Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

#### Company Information

Detailed analysis and profiling of additional market players (up to five).

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