Animal Biotechnology Market Size to Reach USD 58.23 Billion by 2034, Growing at 11.20% CAGR

The global animal biotechnology market size was worth around USD 20.14 billion in 2024 and is predicted to grow to around USD 58.23 billion by 2034

PUNE, MAHARASHTRA, INDIA, September 10, 2025 / EINPresswire.com/ -- The global animal biotechnology market Size is a dynamic and rapidly evolving sector positioned at the confluence of veterinary science, genomics, and pharmaceuticals. With

Animal Biotechnology Market

an estimated valuation of USD 20.14 billion in 2024, the market is poised for exceptional growth, projected to surge to USD 58.23 billion by 2034. This expansion represents a robust Compound Annual Growth Rate (CAGR) of approximately 11.20% during the forecast period from 2025 to

> The global animal biotechnology market size was worth around USD 20.14 billion in 2024 and is predicted to grow to around USD 58.23 billion by 2034, (CAGR) of roughly 11.20% between 2025 and 2034."
>
> *Deepak Rupnar*

2034. This remarkable growth is fueled by a confluence of factors: the rising global demand for protein-rich food, increasing prevalence of zoonotic and animal diseases, advancements in genetic engineering techniques, and a growing emphasis on animal welfare and preventive healthcare. Furthermore, the expansion of companion animal ownership and the subsequent rise in pet healthcare expenditure are creating significant new revenue streams.

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This report provides a comprehensive analysis of the market, dissecting it by technology, application, end-user, and geography. It offers a detailed competitive landscape profiling the key players, their strategic initiatives, and market positioning. The insights herein are designed to
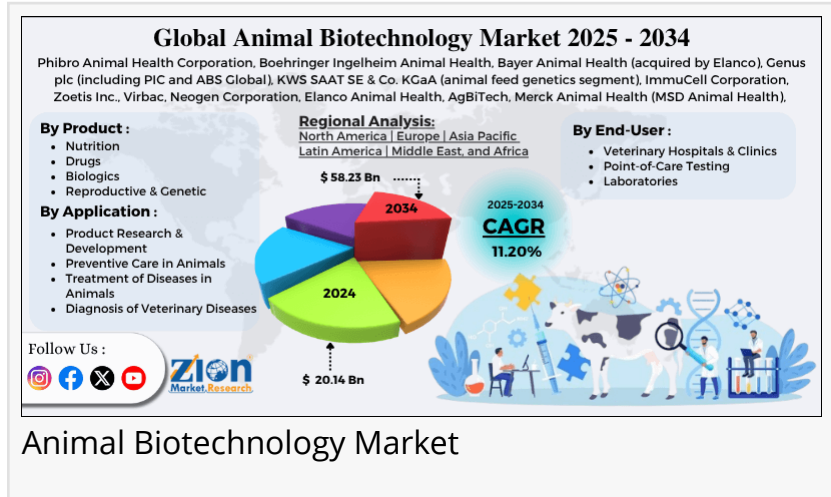
equip stakeholders, investors, pharmaceutical companies, and agribusinesses with the critical intelligence needed to capitalize on emerging opportunities and navigate a complex regulatory and ethical landscape.

1. Introduction and Market Definition

Animal biotechnology is a branch of biotechnology in which molecular biology techniques are used to modify the living organisms of animals to develop or enhance products, improve animal health and welfare, and

Animal Biotechnology Market Size

advance medical research. It encompasses a wide array of technologies, from traditional artificial insemination to cutting-edge gene editing tools like CRISPR.

This report defines the market based on the revenue generated from products, tools, services, and applications derived from biotechnological interventions in animals. The scope is global, encompassing major regional markets and their unique drivers and challenges.

Key Insights:

As per the analysis shared by our research analyst, the global animal biotechnology market is estimated to grow annually at a CAGR of around 11.20% over the forecast period (2025-2034)

In terms of revenue, the global animal biotechnology market size was valued at around USD 20.14 billion in 2024 and is projected to reach USD 58.23 billion by 2034.

The animal biotechnology market is projected to grow at a significant rate due to the rising use of animal-based products across major end-user industries.

Based on the product, the biologics segment is growing at a high rate and will continue to dominate the global market as per industry projections.

Based on the end-user industry, the laboratories segment is anticipated to command the largest market share.

Based on region, North America is projected to dominate the global market during the forecast period.

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2. Market Dynamics: Drivers, Restraints, and Opportunities

2.1. Market Drivers

Surging Global Demand for Animal Protein: The world's growing population, coupled with rising disposable incomes in emerging economies, is escalating the demand for meat, milk, and eggs. Biotechnology is crucial for enhancing livestock productivity through improved breeding, disease
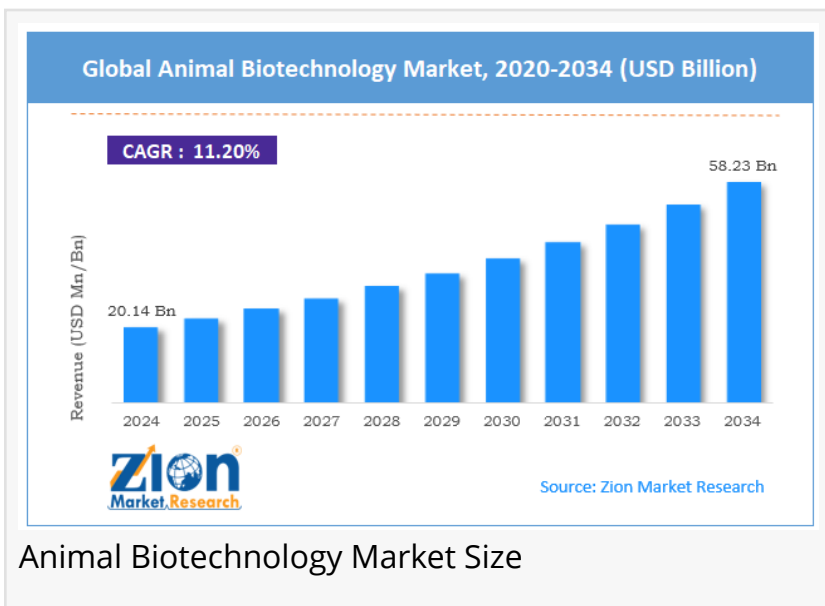
resistance, and faster growth rates.

Increasing Prevalence of Animal Diseases: Outbreaks of diseases like Avian Influenza, African Swine Fever, and Foot-and-Mouth Disease cause massive economic losses. Biotechnology provides advanced tools for rapid diagnostics, vaccine development, and disease prevention, driving adoption among farmers and governments.

Technological Advancements in Genetic Engineering: The advent of precise, efficient, and cost-effective technologies like CRISPR-Cas9 has revolutionized genetic engineering. This enables the development of transgenic animals for pharmaceutical production (pharming), disease-resistant livestock, and models for human disease research.

Rise in Companion Animal Ownership and Expenditure: Pets are increasingly considered family members, leading to a surge in spending on premium healthcare. This fuels demand for advanced biotechnology products, including vaccines, diagnostics, therapeutic proteins, and even genetic testing for breed and disease predisposition.

Government Support and Initiatives: Numerous governments worldwide are funding research in agricultural biotechnology to ensure food security and support farmers. Public-private partnerships are accelerating the development of innovative biotech solutions.

2.2. Market Restraints

Stringent Regulatory Frameworks and Ethical Concerns: The approval process for genetically modified (GM) animals and biotech-derived products is complex, lengthy, and varies significantly across regions. Ethical concerns and public skepticism regarding animal welfare and the consumption of GM animal products pose significant adoption barriers.

High Cost of Research and Development: Developing novel biotechnological products, such as recombinant vaccines or gene therapies, requires substantial capital investment in R&D, advanced facilities, and specialized expertise. This high cost can limit market entry for smaller players and increase the final product cost.

Trade Barriers and Market Acceptance: International trade disputes and bans on GM products can disrupt market growth. Consumer acceptance, particularly in Europe and some parts of Asia, remains a hurdle for food products derived from biotechnology.

2.3. Market Opportunities

Expansion in Emerging Economies: Regions like Asia-Pacific and Latin America present immense untapped potential due to their large livestock populations, growing meat consumption, and increasing awareness of modern farming practices.

Development of Personalized Veterinary Medicine: Mirroring the trend in human medicine, there is a growing opportunity for personalized treatments for companion animals, including gene therapies for genetic disorders and cancer, creating a high-value market niche.

Advancements in Reproductive Technologies: Further innovation in embryo transfer, in-vitro fertilization, and sexed semen technology offers significant opportunities to accelerate genetic improvement in livestock herds.

Microbiome Research: The exploration of the animal gut microbiome for developing probiotic supplements and nutritional products to enhance health, growth, and feed efficiency is an emerging and promising frontier.

3. Market Segmentation Analysis

The global animal biotechnology market can be segmented to understand its multifaceted nature.

3.1. By Technology

This is a fundamental segmentation based on the core technological tools used.

Genomics and DNA Sequencing: The foundation of modern biotechnology. Used for genome mapping, trait selection, genetic disease testing, and breed identification. This is a large and critical segment enabling all others.

Reproductive Technologies: Includes artificial insemination, embryo transfer, in-vitro fertilization, and cloning. These are well-established technologies crucial for propagating superior genetics in livestock.

Gene Editing (CRISPR, TALENs): The fastest-growing segment. Allows for precise, targeted modifications of the animal genome to introduce desirable traits (e.g., disease resistance, leaner meat) or create biomedical models.

Recombinant DNA Technology (rDNA): Used to produce recombinant vaccines (safer and more efficacious), therapeutic proteins (e.g., insulin, growth hormones), and pharmaceuticals in transgenic animals.

Microfluidics and Diagnostics: Involves the development of rapid, point-of-care diagnostic tests for infectious diseases, pregnancy testing, and health monitoring.

3.2. By Application

This segmentation defines the primary purpose of the biotechnological intervention.

Drug and Vaccine Development: The largest application segment. Focuses on creating novel therapeutics, vaccines, and pharmaceuticals for both livestock and companion animals to prevent and treat diseases.

Diagnostic Testing: Includes tools for infectious disease detection, genetic disorder screening, and overall health monitoring. Demand is driven by the need for early and accurate diagnosis.

Reproductive and Genetic Engineering: Direct application of technologies to improve breeding outcomes, create transgenic animals, and enhance genetic traits. This is a high-growth area, especially with gene editing.

Food Safety and Disease Prevention: Biotechnology is used to develop pathogens detection methods in meat and dairy products and to create animals inherently resistant to specific diseases, enhancing food safety.

Other Applications (Tissue Engineering, Xenotransplantation): Emerging applications include creating tissues for research and the potential for genetically modifying animals (e.g., pigs) to grow organs compatible for human transplantation (xenotransplantation).

3.3. By End-User

Veterinary Pharmaceutical & Biopharmaceutical Companies: The dominant end-user. These companies drive R&D and commercialize the majority of biotech products, including vaccines, drugs, and diagnostics.

Animal Husbandry & Livestock Producers: Major consumers of reproductive technologies, genetic testing, and animal health products to optimize productivity and herd health.

Research Institutes & Universities: Key drivers of basic and applied research, often in collaboration with industry players. They are primary users of gene-editing tools and genomic services for scientific discovery.

Companion Animal Owners: A growing end-user segment, purchasing advanced diagnostics, genetic tests, and therapeutics for their pets.

4. Regional Analysis

The market landscape exhibits distinct characteristics across different geographies.

North America:

Market Character: The largest and most mature market, led by the U.S. Characterized by high R&D investment, a strong presence of key players, advanced livestock farming practices, and high per capita pet expenditure.

Growth Drivers: Supportive regulatory frameworks for animal drug approval, high technology adoption, and significant government funding for agricultural research.

Challenges: Ethical debates and some consumer resistance to GM products.

Europe:

Market Character: A significant market with a strong focus on animal welfare and stringent regulations, particularly concerning GM organisms. Germany, France, and the UK are key contributors.

Growth Drivers: Advanced research infrastructure, high demand for premium pet healthcare, and a well-established livestock sector focused on quality and traceability.

Challenges: The precautionary principle towards GMOs creates a challenging environment for approving and commercializing GM animals and their products.

Asia-Pacific (APAC):

Market Character: The fastest-growing regional market. Growth is fueled by China, India, and Japan. It boasts the world's largest livestock population and a rapidly expanding middle class.

Growth Drivers: Massive demand for animal protein, government initiatives to modernize agriculture, increasing outbreaks of livestock diseases, and a growing pet culture.

Challenges: Uneven regulatory standards, infrastructure gaps in rural areas, and price sensitivity among small-scale farmers.

Latin America, Middle East, and Africa (LAMEA):

Market Character: An emerging market with high growth potential. Brazil and Argentina are regional leaders due to their massive beef and poultry industries.

Growth Drivers: Large agricultural base, increasing adoption of technology to boost exports, and growing focus on animal health to meet international standards.

Challenges: Economic and political volatility in some countries and limited access to advanced technologies for smallholder farmers.

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5. Key Player Landscape and Competitive Analysis
The market is moderately consolidated, with a mix of established pharmaceutical giants, specialized biotechnology firms, and animal health companies. Competition is intense and based on R&D innovation, product portfolio, geographic reach, and strategic partnerships.

Detailed Profiles of Key Players:
Zoetis Inc.
Overview: The world's leading animal health company, spun off from Pfizer. It possesses a vast portfolio and a global footprint.
Product Portfolio: A comprehensive range of vaccines, pharmaceuticals, diagnostics, and genetic tests for both livestock and companion animals.
Strategy: Leverages its scale and market leadership, invests heavily in R&D (including biotech), and grows through acquisitions and partnerships to enhance its technological capabilities.

Merck & Co., Inc. (Animal Health Division, now MSD Animal Health)
Overview: A global healthcare giant with a major division dedicated to animal health, known for its strong R&D pipeline.
Product Portfolio: Offers a wide array of biologicals (vaccines), pharmaceuticals, and technology-driven solutions like data analytics for livestock management.
Strategy: Focuses on developing innovative vaccines and pharmaceuticals, with significant investment in biotechnology research for novel disease interventions.

Elanco Animal Health Incorporated
Overview: A major pure-play animal health company that acquired Bayer's Animal Health business, significantly expanding its portfolio and market share.
Product Portfolio: Diverse portfolio including vaccines, antibiotics, parasiticides, and pet therapeutics. Increasingly focused on innovation and biotechnology.
Strategy: Aims to leverage its expanded portfolio post-acquisition, drive operational efficiencies, and invest in high-growth areas like pet healthcare and biotechnology.

Heska Corporation (Antech Diagnostics)
Overview: A company focused primarily on the companion animal segment, specializing in advanced diagnostics and point-of-care solutions.
Product Portfolio: Offers blood analyzers, digital imaging, allergy testing, and molecular diagnostics (PCR) used in veterinary clinics.
Strategy: Targets the high-growth companion animal diagnostics market with advanced technological solutions and a direct sales force to veterinary practices.

CRV Holding B.V. (Cooperativa Regional de Criadores de Gado Holandês)
Overview: A leading international cattle breeding company based in the Netherlands, specializing

in genetic improvement.
Product Portfolio: Provides dairy and beef genetics, semen, embryos, and advanced breeding software and data analytics.
Strategy: Focuses on leveraging genomics and data to drive genetic progress in dairy and beef herds worldwide, representing the application of biotechnology in animal breeding.

Other Notable Players: Genus PLC (leading in bovine genetics and porcine genetics), Virbac (global veterinary pharmaceuticals), IDEXX Laboratories (global leader in veterinary diagnostics), Neogen Corporation (food safety and animal health diagnostics), and Intrexon Corporation (focused on synthetic biology and gene editing).

6. Strategic Recommendations
For Established Players: Prioritize strategic investments in gene editing and genomics R&D to maintain a competitive edge. Focus on forming partnerships with research institutions for early access to breakthrough technologies. Expand presence in high-growth APAC markets through localized strategies.
For New Entrants: Identify and target niche, high-value applications with less regulatory overhead, such as companion animal diagnostics or specialty reproductive technologies. Consider a B2B model, providing technology or services to larger pharmaceutical companies.
For Investors: The companion animal biotechnology segment and the gene editing tools space present highly attractive investment opportunities due to their high growth rates and margins. Monitoring startups focused on CRISPR applications and microbiome research is advised.

7. Conclusion
The global animal biotechnology market stands at a transformative juncture. The projected growth to over USD 58 billion by 2034 is a testament to its critical role in addressing some of the world's most pressing challenges: food security, animal health, and disease prevention. While regulatory hurdles and ethical debates will persist, the undeniable benefits of improved productivity, disease control, and advanced veterinary care will continue to drive adoption. The future will be shaped by precision genetics, data analytics, and personalized medicine, making animal biotechnology a cornerstone of a more sustainable and healthy future for both animals and humans. Success in this market will belong to those who can innovate responsibly, navigate the complex regulatory landscape, and effectively communicate the value of their solutions to a diverse global audience.

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