

# Precision Fermentation Ingredients Market by Ingredient (Whey & Casein Protein, Egg White, Collagen Protein, Heme Protein), Microbe (Yeast, Algae, Fungi, Bacteria) End User, Food & Beverage Application, and Region - Global Forecast to 2030

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## Abstracts

According to MarketsandMarkets, the global precision fermentation ingredients market size is estimated to be valued at USD 2.8 billion in 2023, with a projected increase to USD 36.3 billion by 2030, showcasing a robust CAGR of 44.0% in terms of value. The market's expansion can be attributed to the growing number of startups venturing into precision fermentation industry, driven by heightened investor interest from companies like ADM and Cult Food. Given that precision fermentation involves lab-grown ingredients, it demands substantial investments in research and development to expedite product commercialization. Factors such as rising concern for animal welfare, environmental sustainability, and the demand for alternative proteins have spurred the market's momentum for precision fermentation ingredients.

“By end-use, the pharmaceutical segment is projected to account for the second-largest market share during the forecast period.”

The pharmaceutical segment holds the second-largest market share due to precision fermentation's potential in producing complex therapeutic proteins, enzymes, and bioactive compounds. This technology enables cost-effective and scalable production of biopharmaceuticals, reducing dependency on traditional methods. Precision fermentation offers precise control over product characteristics, ensuring high-quality outputs. Moreover, it allows for the development of innovative treatments, including personalized medicines and rare disease therapies. These advantages drive pharmaceutical companies to invest in precision fermentation, addressing unmet

medical needs and fostering advancements in medical science. For example, in 2021, McKinsey, a US-based company strategically employs advanced tech to enhance biologic fermentation, optimizing microbial hosts via genetic sequencing, editing, analytics, and automation. This could revolutionize the fermentation-derived API market, enhancing pharmaceutical production processes and yields. Despite regulatory hurdles, these innovations hold the potential to drive substantial value and growth.

“By food & beverage application, the meat & seafood segment is anticipated to hold the second-largest market share. during the forecast period.”

The demand for plant-based proteins in the meat alternatives category is poised to surge due to the remarkable growth of the global plant-based meat industry. Industry players like Impossible Foods, Motif FoodWorks, and Melt&Marble have introduced precision-fermented meat alternative products such as burgers, fats, and proteins. Further, the involvement of established meat and food producers can significantly accelerate the industry's progress, leveraging their resources, infrastructure, and distribution networks through collaborations, investments, acquisitions, and the incorporation of fermentation-derived ingredients.

“By ingredient type, the whey & casein protein holds the second-largest market share, following enzymes.”

Whey protein, extracted from dairy products, boasts high digestibility and amino acid balance, often used in sports nutrition and food & beverage sectors. Its neutral flavor makes it adaptable across products without altering the taste. However, the rise of sustainable and meatless preferences has driven innovation, leading to dairy-free cheese and plant-based sports nutrition. Precision fermentation, an emerging technology, meets this demand, providing whey and other ingredients without traditional animal sources. This aligns with evolving consumer choices and positions precision fermentation as a transformative solution.

“By microbe type, the bacteria segment is projected to demonstrate the highest CAGR in the market.”

Bacteria have been proven instrumental in various bioprocesses, offering advantages like rapid growth, genetic modification feasibility, and extensive metabolic pathways manipulation. These attributes empower researchers to engineer bacteria for the targeted production of a wide range of valuable compounds, ranging from pharmaceuticals to sustainable food ingredients. The extensive biological diversity

present in microbial species and their limitless biosynthesis capabilities offer significant potential for creating innovative alternative protein solutions through fermentation-based methods. However, microorganism-derived proteins are currently striving to achieve comparable levels of taste, texture, and cost-effectiveness as conventional animal proteins.

“The Asia Pacific region is expected to exhibit the highest CAGR in the precision fermentation ingredients market.”

The surge in awareness about animal welfare through organizations like PETA has driven a shift towards meat-free diets. Non-meat dishes are already prevalent in the Asia Pacific region, with tofu and bean-based congees widely consumed. The demand for precision fermented egg alternatives in the region is propelled by the increasing adoption of vegetarian diets and rising egg prices. Furthermore, these alternatives offer health benefits such as low cholesterol and high protein content. China, a significant player in this market, demonstrates its commitment through strategic plans that support alternative protein research and development, showcasing the region's dedication to advancing precision fermentation process.

The precision fermentation ingredients market is divided by regions, with a comprehensive examination of each geographical area. These regions include North America, Europe, Asia Pacific, South America, and the Middle East & Africa.

Breakdown of Primaries:

In-depth interviews were conducted with various key industry participants, subject-matter experts, C-level executives of key market players, and industry consultants, among other experts, to obtain and verify critical qualitative and quantitative information, as well as to assess future market prospects. The distribution of primary interviews is as follows:

By Company Type: Tier 1- 30%, Tier 2- 45%, Tier 3- 25%

By Designation: CXOs- 25%, Managers- 50%, Executives- 25%

By Region: North America- 25%, Europe- 25%, Asia Pacific- 40%, and RoW - 10%

Key players in this market are Geltor (US), Perfect Day, Inc. (US), The Every Co. (US), Impossible Foods Inc. (US), and others.

## Research Coverage:

This research report categorizes the Precision fermentation ingredients By Ingredient (Whey & Casein Protein, Egg White, Collagen Protein, Heme Protein, Enzymes, Others), Microbe (Yeast, Algae, Fungi, Bacteria), By End User (Food & Beverages, Pharmaceutical, Cosmetics & Others) Food & Beverage Application (Meat & Seafood, Dairy Alternatives, Egg Alternatives, Others), & Region (North America, Europe, APAC, South America, Middle East & Africa). The report's scope covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the Precision fermentation ingredients market. A detailed analysis of the key industry players has been done to provide insights into their business overview, solutions, new product launches, mergers & acquisitions, partnerships, agreements, and other recent developments in the Precision fermentation ingredients market. Competitive analysis of coming startups in the Precision fermentation ingredients market is covered in this report.

## Reasons to buy this report:

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall Precision fermentation ingredients market and the subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market's pulse and provide them with information on key market drivers, restraints, challenges, and opportunities.

## The report provides insights on the following pointers:

Analysis of key drivers (Health-conscious consumers, alternative protein demand), restraints (Cost-efficiency, consumer acceptance, competition), opportunities (pharmaceutical applications, cross-industry collaboration, environmental benefits, Innovation, and product diversification), and challenges (Cost-efficiency, consumer acceptance, competition) influencing the growth of the Precision fermentation ingredients market

Product Development/Innovation: Detailed insights on coming technologies, R&D activities, and product launches in the Precision fermentation ingredients market.

**Market Development:** Comprehensive information about lucrative markets – the report analyses the Precision fermentation ingredients market across varied regions.

**Market Diversification:** Exhaustive information about new products, untapped geographies, recent developments, and investments in the Precision fermentation ingredients market.

**Competitive Assessment:** In-depth assessment of market shares, growth strategies, and service offerings of leading players like Perfect Day, Inc., Impossible Foods Inc., Geltor, and others in the Precision fermentation ingredients market.

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\*Details on Business overview, Products/Solutions/Services offered, Recent Developments, MNM view, Key strengths, Strategic choices made, Weaknesses and competitive threats might not be captured in case of unlisted companies.

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