

Single-Cell Protein Hydrolysates Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

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Abstracts

The Global Single-Cell Protein Hydrolysates Market was valued at USD 288.4 million in 2024 and is estimated to grow at a CAGR of 9.5% to reach USD 721 million by 2034.

Single-cell protein (SCP) hydrolysates are becoming a crucial component of the sustainable protein economy, supported by their strong digestibility, amino acid availability, and functional attributes derived from microbial sources such as bacteria, yeast, fungi, and microalgae. Their production is associated with a low environmental footprint, often relying on waste streams or gas-based feedstocks, which enhances their appeal across animal nutrition, human food applications, and nutraceuticals. As global protein requirements increase and environmental pressures intensify, SCP hydrolysates are gaining prominence in aquaculture diets, clinical nutrition, and circular bioeconomy strategies. Their alignment with circular systems, especially using industrial off-gases, organic residues, and biomass-derived substrates, helps address land constraints, emission reduction efforts, and food security priorities. These factors are moving SCP hydrolysates from emerging technologies into widely adopted commercial solutions.

The bacterial SCP hydrolysates segment accounted for 34% in 2024 and is expected to grow at a CAGR of 8.9% by 2034. Hydrolysates produced from bacterial and yeast platforms continue to expand due to rapid biomass generation, strong scalability, and compatibility with gas-based substrates. They are used to enhance gut performance, while yeast-derived hydrolysates, particularly from *Saccharomyces* species, are becoming more common in pet food and flavor-enhancing applications.

The animal nutrition segment held a 45.4% share in 2024 and is projected to grow at a CAGR of 9.3% through 2034. Growth is led by aquaculture, driven by the stability and

digestibility of SCP ingredients, offering a sustainable alternative to conventional marine-based proteins. Providers of microbial proteins are customizing solutions for various species, and manufacturers in the pet food sector are incorporating yeast and bacterial hydrolysates to improve palatability and digestive health. Livestock operations are also adopting SCP hydrolysates to lower feed expenses and reduce dependency on traditional additives.

U.S. Single-Cell Protein Hydrolysates Market reached USD 70.3 million in 2024 and is anticipated to register a CAGR of 9.5% from 2025 to 2034. With multiple innovators expanding SCP hydrolysate production using natural gas and industrial co-products, the United States remains a key driver of scale-up and technological advancement across feed and nutrition applications.

Major companies participating in the Global Single-Cell Protein Hydrolysates Market include Calysta, Unibio, Solar Foods, KnipBio, Quorn Foods, Arbiom, Corbion, DSM-Firmenich, Novozymes (now part of Novonesis), Angel Yeast, Lesaffre, Alltech, Nutreco, and AlgaeCytes. Companies competing in this market are strengthening their positions through large-scale fermentation expansion, cost-optimized bioprocessing, and advanced strain engineering to boost protein yields and enhance nutrient profiles. Many firms are forming supply partnerships with feed manufacturers and food companies to secure long-term contracts while tailoring hydrolysate compositions for species-specific nutritional needs. Sustainability commitments, including the use of waste-derived and gas-fed feedstocks, are helping companies stand out as environmentally aligned suppliers. Product diversification, regulatory compliance strategies, and investments in high-value applications such as clinical nutrition and functional formulations are further supporting stronger global market footholds.

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