

# U.S. Plant-based API Market Size, Share & Trends Analysis Report By Molecule Type (Alkaloids, Anthocyanin, Flavonoids, Phenolic Acids, Terpenoids, Lignin And Stilbenes), By End Use, And Segment Forecasts, 2025 - 2033

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## Abstracts

### Summary

The U.S. plant-based API market size was estimated at USD 9.69 billion in 2024 and is projected to reach USD 15.77 billion by 2033, growing at a CAGR of 5.5% from 2025 to 2033. The market is witnessing strong growth due to the increasing adoption of natural and sustainable pharmaceutical ingredients. Rising consumer preference for herbal and plant-derived therapies drives demand for medications with fewer synthetic additives and improved safety profiles.

Pharmaceutical companies are focusing on research to identify new bioactive compounds and develop formulations with enhanced efficacy. Advances in extraction, purification, and analytical technologies have improved the yield, consistency, and stability of plant-based APIs, yielding high-quality products that meet stringent standards. For instance, in September 2025, *Current Issues in Molecular Biology* reported that metabolic engineering raised terpenoid production, including paclitaxel, by 25 fold and enhanced artemisinin yield by 38%. Multi-omics approaches and CRISPR tools addressed low natural yields and scale-up challenges, providing a roadmap for translating lab-scale production into industrial manufacturing. These innovations support broader integration of plant-based APIs in mainstream pharmaceuticals, expanding therapeutic options and strengthening consumer confidence.

Technological advancements are a major factor in market expansion. Methods such as

plant tissue culture, enzyme-assisted extraction, and biofermentation enable the scalable production of high-quality APIs while maintaining therapeutic effectiveness. Sophisticated analytical techniques, including chromatography and spectroscopy, ensure precise identification and quantification of bioactive compounds, reducing variability in manufacturing. These improvements enhance product quality and optimize production costs, supporting large-scale commercialization. Integrated production platforms combining biotechnology with traditional plant extraction enable efficient and consistent manufacturing. Such progress attracts new players to the market and encourages established companies to expand their plant-based product portfolios. Continuous innovation in technology and processing enhances the potential of plant-based APIs, enabling the discovery of novel compounds for diverse therapeutic applications.

Rising prevalence of chronic and lifestyle-related diseases in the U.S. further fuels demand for plant-based APIs. Conditions such as cardiovascular disorders, diabetes, inflammation, and neurodegenerative diseases are increasingly addressed using plant-derived compounds due to their targeted therapeutic benefits. Collaborations between pharmaceutical firms and research institutions accelerate the discovery of novel molecules and support the development of effective treatments. For instance, in March 2025, Natural Products and Bioprospecting reported the isolation of 217 new terpenoids from *Aspergillus* species, highlighting fungi as an under-exploited source of antimicrobial compounds. The growing interest in complementary and integrative medicine presents additional opportunities for market expansion. Continuous clinical studies validate efficacy and safety, while manufacturers leverage these insights to develop innovative dosage forms, ensuring strong and sustained growth for the U.S. plant-based API market over the coming decade.

## U.S. Plant-based API Market Report Segmentation

This report forecasts revenue growth at the country level and provides an analysis of the latest industry trends in each of the sub-segments from 2021 to 2033. For this study, Grand View Research has segmented the U.S. plant-based API market report based on molecule type and end use:

### Molecule Type Outlook (Revenue, USD Million, 2021 - 2033)

Alkaloids

Anthocyanin

Flavonoids

Phenolic Acids

Terpenoids

Lignin and Stilbenes

Others

End Use Outlook (Revenue, USD Million, 2021 - 2033)

Pharmaceuticals

Nutraceuticals

Herbal Based Industries

Others

**This report can be delivered to the clients within 2 Business Days**

## Contents

### CHAPTER 1. METHODOLOGY AND SCOPE

- 1.1. Market Segmentation & Scope
- 1.2. Segment Definitions
  - 1.2.1. Molecule Type
  - 1.2.2. End Use
- 1.3. Estimates and Forecast Timeline
- 1.4. Research Methodology
- 1.5. Information Procurement
  - 1.5.1. Purchased Database
  - 1.5.2. GVR's Internal Database
  - 1.5.3. Secondary Sources
  - 1.5.4. Primary Research
- 1.6. Information Analysis
  - 1.6.1. Data Analysis Models
- 1.7. Market Formulation & Data Visualization
- 1.8. Model Details
  - 1.8.1. Commodity Flow Analysis
- 1.9. List of Secondary Sources
- 1.10. Objectives

### CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. Market Snapshot
- 2.2. Segment Snapshot
- 2.3. Competitive Landscape Snapshot

### CHAPTER 3. U.S. PLANT-BASED API MARKET VARIABLES, TRENDS, & SCOPE

- 3.1. Market Lineage Outlook
- 3.2. Market Dynamics
  - 3.2.1. Market Driver Analysis
  - 3.2.2. Market Restraint Analysis
- 3.3. Business Environment Analysis
  - 3.3.1. Industry Analysis - Porter's Five Forces Analysis
    - 3.3.1.1. Supplier Power
    - 3.3.1.2. Buyer Power

- 3.3.1.3. Substitution Threat
- 3.3.1.4. Threat of New Entrants
- 3.3.1.5. Competitive Rivalry
- 3.3.2. PESTLE Analysis
- 3.3.3. Pipeline Analysis
- 3.3.4. Patent Expiry Analysis
- 3.3.5. Pricing Analysis

## **CHAPTER 4. U.S. PLANT-BASED API MARKET: MOLECULE TYPE BUSINESS ANALYSIS**

- 4.1. Molecule Type Market Share, 2024 & 2033
- 4.2. Molecule Type Segment Dashboard
- 4.3. Market Size & Forecasts and Trend Analysis, by Molecule Type, 2021 to 2033 (USD Million)
- 4.4. Alkaloids
  - 4.4.1. Alkaloids Market, 2021 - 2033 (USD Million)
- 4.5. Anthocyanin
  - 4.5.1. Anthocyanin Market, 2021 - 2033 (USD Million)
- 4.6. Flavonoids
  - 4.6.1. Flavonoids Market, 2021 - 2033 (USD Million)
- 4.7. Phenolic Acids
  - 4.7.1. Phenolic Acids Market, 2021 - 2033 (USD Million)
- 4.8. Terpenoids
  - 4.8.1. Terpenoids Market, 2021 - 2033 (USD Million)
- 4.9. Lignin and Stilbenes
  - 4.9.1. Lignin and Stilbenes Market, 2021 - 2033 (USD Million)
- 4.10. Others
  - 4.10.1. Others Market, 2021 - 2033 (USD Million)

## **CHAPTER 5. U.S. PLANT-BASED API MARKET: END USE BUSINESS ANALYSIS**

- 5.1. End Use Market Share, 2024 & 2033
- 5.2. End Use Segment Dashboard
- 5.3. Market Size & Forecasts and Trend Analysis, by end use, 2021 to 2033 (USD Million)
- 5.4. Pharmaceuticals
  - 5.4.1. Pharmaceuticals Market, 2021 - 2033 (USD Million)
- 5.5. Nutraceuticals

- 5.5.1. Nutraceuticals Market, 2021 - 2033 (USD Million)
- 5.6. Herbal Based Industries
  - 5.6.1. Herbal Based Industries Market, 2021 - 2033 (USD Million)
- 5.7. Others
  - 5.7.1. Others Market, 2021 - 2033 (USD Million)

## **CHAPTER 6. COMPETITIVE LANDSCAPE**

- 6.1. Participant Overview
- 6.2. Company Market Position Analysis
- 6.3. Company Categorization
- 6.4. Strategy Mapping
- 6.5. Company Profiles/Listing
  - 6.5.1. Brains Bioceutical Corp.
    - 6.5.1.1. Overview
    - 6.5.1.2. Financial Performance
    - 6.5.1.3. Product Benchmarking
    - 6.5.1.4. Strategic Initiatives
  - 6.5.2. Arboris LLC
    - 6.5.2.1. Overview
    - 6.5.2.2. Financial Performance
    - 6.5.2.3. Product Benchmarking
    - 6.5.2.4. Strategic Initiatives
  - 6.5.3. Cargill, Incorporated
    - 6.5.3.1. Overview
    - 6.5.3.2. Financial Performance
    - 6.5.3.3. Product Benchmarking
    - 6.5.3.4. Strategic Initiatives
  - 6.5.4. Roquette
    - 6.5.4.1. Overview
    - 6.5.4.2. Financial Performance
    - 6.5.4.3. Product Benchmarking
    - 6.5.4.4. Strategic Initiatives
  - 6.5.5. HimPharm
    - 6.5.5.1. Overview
    - 6.5.5.2. Financial Performance
    - 6.5.5.3. Product Benchmarking
    - 6.5.5.4. Strategic Initiatives
  - 6.5.6. Kothari Phytochemicals & Industries Ltd.

- 6.5.6.1. Overview
- 6.5.6.2. Financial Performance
- 6.5.6.3. Product Benchmarking
- 6.5.6.4. Strategic Initiatives
- 6.5.7. BASF
  - 6.5.7.1. Overview
  - 6.5.7.2. Financial Performance
  - 6.5.7.3. Product Benchmarking
  - 6.5.7.4. Strategic Initiatives
- 6.5.8. Evonik Industries
  - 6.5.8.1. Overview
  - 6.5.8.2. Financial Performance
  - 6.5.8.3. Product Benchmarking
  - 6.5.8.4. Strategic Initiatives
- 6.5.9. Alchem International
  - 6.5.9.1. Overview
  - 6.5.9.2. Financial Performance
  - 6.5.9.3. Product Benchmarking
  - 6.5.9.4. Strategic Initiatives
- 6.5.10. Sami-Sabinsa Group
  - 6.5.10.1. Overview
  - 6.5.10.2. Financial Performance
  - 6.5.10.3. Product Benchmarking
  - 6.5.10.4. Strategic Initiatives

## List Of Tables

### LIST OF TABLES

Table 1 List of secondary sources

Table 2 List of abbreviations

Table 3 US plant-based API market, by molecule type, 2021 - 2033 (USD Million)

Table 4 US plant-based API market, by end use, 2021 - 2033 (USD Million)

## List Of Figures

### LIST OF FIGURES

- Fig. 1 U.S. Plant-based API market segmentation
- Fig. 2 Market research process
- Fig. 3 Data triangulation techniques
- Fig. 4 Primary research pattern
- Fig. 5 Market research approaches
- Fig. 6 Value-chain-based sizing & forecasting
- Fig. 7 Market formulation & validation
- Fig. 8 Market snapshot
- Fig. 9 Competitive landscape
- Fig. 10 U.S. Plant-based API market dynamics
- Fig. 11 U.S. Plant-based API market: Porter's five forces analysis
- Fig. 12 U.S. Plant-based API market: PESTLE analysis
- Fig. 13 Molecule Type market, 2021 - 2033 (USD Million)
- Fig. 14 Alkaloids market, 2021 - 2033 (USD Million)
- Fig. 15 Anthocyanin market, 2021 - 2033 (USD Million)
- Fig. 16 Flavonoids market, 2021 - 2033 (USD Million)
- Fig. 17 Phenolic Acids market, 2021 - 2033 (USD Million)
- Fig. 18 Terpenoids market, 2021 - 2033 (USD Million)
- Fig. 19 Lignin and Stilbenes market, 2021 - 2033 (USD Million)
- Fig. 20 Others market, 2021 - 2033 (USD Million)
- Fig. 21 End use market, 2021 - 2033 (USD Million)
- Fig. 22 Pharmaceuticals market, 2021 - 2033 (USD Million)
- Fig. 23 Nutraceuticals market, 2021 - 2033 (USD Million)
- Fig. 24 Herbal Based Industries market, 2021 - 2033 (USD Million)
- Fig. 25 Others market, 2021 - 2033 (USD Million)
- Fig. 26 Company categorization
- Fig. 27 Company market position analysis
- Fig. 28 Strategic framework

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