

# **Global Anti-inflammatory Peptides Market Size study, by Mechanism of Action (NF- $\kappa$ B Inhibition, JAK/STAT Inhibition, Interleukin Inhibition, TNF- $\alpha$ Inhibition), by Indication (Rheumatoid Arthritis, Osteoarthritis, Gout, Multiple Sclerosis), by Source, by Route of Administration, and Regional Forecasts 2022-2032**

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## **Abstracts**

Global Anti-inflammatory Peptides Market is valued approximately at USD 4.39 billion in 2023 and is anticipated to grow with a phenomenal CAGR of more than 11.96% over the forecast period 2024–2032. Amid the escalating global prevalence of inflammatory diseases and autoimmune disorders, anti-inflammatory peptides have emerged as a transformative class of biomolecules, forging a new frontier in immunomodulatory therapies. Unlike traditional broad-spectrum drugs that often invite undesirable systemic side effects, these peptides offer targeted intervention at the molecular level—modulating specific signaling pathways such as NF- $\kappa$ B, JAK/STAT, and TNF- $\alpha$ . With a natural origin and high biocompatibility, they hold compelling therapeutic promise for conditions ranging from rheumatoid arthritis and osteoarthritis to multiple sclerosis and inflammatory bowel disease.

This market's ascent is being shaped by relentless innovation in peptide engineering, where breakthroughs in synthetic biology and molecular docking have drastically improved peptide stability, specificity, and delivery. Pharmaceutical companies are racing to harness the advantages of peptides—such as lower immunogenicity and enhanced bioactivity—to develop novel anti-inflammatory formulations that align with precision medicine paradigms. Additionally, the rise of biologics and biosimilars in chronic disease therapy is paving the way for anti-inflammatory peptides to be explored not just as standalone treatments, but as combination partners with conventional drugs

and biologics. However, despite their therapeutic appeal, challenges surrounding peptide degradation, manufacturing scalability, and regulatory clarity pose hurdles to full-scale commercial adoption.

In response, a number of biotech and pharma players are collaborating with academic institutions to innovate novel delivery systems—ranging from oral formulations resistant to enzymatic breakdown to injectable microsphere-based sustained release platforms. Meanwhile, plant and microbial-derived peptides are gaining attention due to their renewable sourcing and relatively lower production costs, especially critical in expanding access across lower-income regions. As R&D activity intensifies, especially in the domains of interleukin inhibition and JAK/STAT modulation, multiple candidates are currently progressing through clinical trials, targeting diseases with previously unmet therapeutic needs.

Market dynamics are also being reshaped by the growing trend of decentralized clinical trials and patient-centric drug designs. Enhanced focus on outpatient and self-administered therapies is pushing the development of topical and oral peptide-based anti-inflammatories. Moreover, AI-driven peptide screening platforms are being increasingly utilized to accelerate discovery cycles and minimize attrition rates in early-phase development. Industry stakeholders are also engaging in strategic licensing deals and regional expansion tactics to penetrate high-burden markets and navigate patent cliffs with differentiated product pipelines.

Geographically, North America commands the largest share of the global anti-inflammatory peptides market, buoyed by robust funding for immunological research, advanced healthcare systems, and strong IP protection frameworks. Europe follows closely, particularly in nations like Germany and the UK, where government-backed initiatives are promoting peptide therapeutics. Meanwhile, Asia Pacific is expected to witness the most accelerated growth, underpinned by a rapidly aging population, rising healthcare expenditures, and the increasing domestic production of therapeutic peptides in countries such as China, India, and South Korea. Latin America and the Middle East & Africa are also showing encouraging momentum, supported by multinational clinical trials and growing public awareness of inflammatory disease management.

**Major market player included in this report are:**

Amgen Inc.

Novartis AG

Pfizer Inc.

Teva Pharmaceutical Industries Ltd.

Eli Lilly and Company

AbbVie Inc.

Bristol-Myers Squibb Company

AstraZeneca PLC

GlaxoSmithKline PLC

Merck & Co., Inc.

Sanofi S.A.

F. Hoffmann-La Roche Ltd

Takeda Pharmaceutical Company Limited

BioCryst Pharmaceuticals, Inc.

Regeneron Pharmaceuticals, Inc.

**The detailed segments and sub-segment of the market are explained below:**

By Mechanism of Action

NF- $\kappa$ B Inhibition

JAK/STAT Inhibition

Interleukin Inhibition

## TNF- $\alpha$ Inhibition

### By Indication

Rheumatoid Arthritis

Osteoarthritis

Gout

Multiple Sclerosis

### By Source

Animal Origin

Plant Origin

Microbial Origin

### By Route of Administration

Injections

Oral

Topical

### By Region:

North America

U.S.

Canada

## Europe

UK

Germany

France

Spain

Italy

Rest of Europe

## Asia Pacific

China

India

Japan

Australia

South Korea

Rest of Asia Pacific

## Latin America

Brazil

Mexico

Rest of Latin America

## Middle East & Africa

Saudi Arabia

South Africa

Rest of Middle East & Africa

## Years considered for the study are as follows:

Historical year – 2022

Base year – 2023

Forecast period – 2024 to 2032

## Key Takeaways:

Market Estimates & Forecast for 10 years from 2022 to 2032.

Annualized revenues and regional level analysis for each market segment.

Detailed analysis of geographical landscape with Country level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of competitive structure of the market.

Demand side and supply side analysis of the market.

## Companies Mentioned

Amgen Inc.

Novartis AG

Pfizer Inc.

Teva Pharmaceutical Industries Ltd.

Eli Lilly and Company

AbbVie Inc.

Bristol-Myers Squibb Company

AstraZeneca PLC

GlaxoSmithKline PLC

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