

Controlled Release Drug Delivery Market Increasing Demand, Growth Analysis and Future Outlook by 2032

In 2022, the Controlled Release Drug Delivery Market reached a value of USD 49.23 bn, driven by innovations enabling precise and sustained medication release

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/EINPresswire.com/ -- The global [Controlled Release Drug Delivery Market](#), valued at USD 49.23 billion in 2022, is anticipated to grow rapidly at a compound annual growth rate (CAGR) of 10.1% through the forecast period, driven by rising investments in research and development, and technological advancements in drug delivery systems.



Key Drivers of Market Growth

Advancements in Nanoparticle Drug Delivery Systems

One of the major drivers of market growth is the development of nanoparticle drug delivery systems. These nanoparticles are engineered to target specific tissues or cells, ensuring precise control over drug release, minimizing side effects, and increasing overall treatment efficiency. This technological innovation is significantly enhancing the quality and pace of drug development processes.

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Increasing Prevalence of Chronic Disorders

The rising incidence of chronic diseases, such as heart disease, stroke, cancer, and diabetes, which account for approximately 71% of global deaths, is another critical factor fueling market

expansion. Controlled release drug delivery systems, such as those used in diabetes management, provide stable and long-term therapeutic effects, optimizing patient outcomes and minimizing symptom fluctuations.

Technological Advancements in Drug Delivery

Technological advancements, including Artificial Intelligence (AI) and Machine Learning (ML), are revolutionizing drug delivery systems. Companies like Evonik have introduced high-precision excipient platforms like RESOMER, offering unparalleled control over drug release profiles, thus improving therapeutic outcomes and minimizing side effects. These advancements also enhance drug stability, reduce regulatory challenges, and ensure consistent delivery over time.

Market Restraints

Despite its promising growth, the market faces challenges such as stringent regulatory requirements and potential side effects associated with controlled release drugs. Extensive preclinical and clinical trials are necessary to ensure safety and efficacy, extending development timelines and costs. Additionally, differing regulations across regions add complexity, further escalating costs and delaying market entry.

Controlled Release Drug Delivery Top Companies and Competitive Landscape

The global CRDD market is fairly fragmented with many large and medium-sized players accounting for majority of market revenue. Major players are deploying various strategies, entering into mergers & acquisitions, strategic agreements & contracts, developing, testing, and introducing more effective CRDD solutions.

Some major players included in the global CRDD report is:

Merck & Co., Inc.

Alkermes

Johnson & Johnson Private Limited

Coating Place, Inc.

Corium, LLC

Pfizer Inc.

Assertio Holdings, Inc.

GSK plc

Novartis AG

Biogen

Controlled Release Drug Delivery Latest Industry News

On 4 January 2023, Biogen and Alcyone Therapeutics announced its partnership to develop a device for delivering gene-silencing drugs (ASO) to treat neurological disorders. Alcyone's ThecaFlex DRx is an implantable device that allows ASOs to bypass traditional injections and directly reach the spinal cord through a subcutaneous port. This offers a less invasive and potentially more reliable way to deliver ASOs compared to repeated injections. This collaboration changes the way for more effective and patient-friendly treatment options for neurological diseases.

On 18 May 2022, DelSiTech and Anticancer Bioscience announced its partnership to develop long-lasting, controlled-release cancer treatments using DelSiTech's silica-based technology. Many promising cancer therapies struggle with limited effectiveness due to issues such as poor solubility, side effects, or instability. This collaboration aims to offers longer intervals between treatments, improving convenience and potentially reducing side effects.

Segment Insights

Technology Segment

The targeted delivery segment dominated the market in 2022 due to its ability to deliver drugs directly to diseased cells, maximizing drug concentration at the site of action and reducing side effects. The microencapsulation segment is expected to grow rapidly, offering versatile drug encapsulation methods that enhance stability, protect against degradation, and improve delivery efficiency.

Mechanism Segment

Feedback-regulated drug delivery systems (FRDDS) are anticipated to hold a significant market share. These systems use real-time monitoring to adjust drug release based on physiological parameters, optimizing efficacy and minimizing unnecessary drug exposure. Chemically activated systems, which respond to specific environmental cues for targeted drug release, are also projected to grow steadily.

Application Segment

Oral controlled drug delivery systems are expected to lead the market due to their non-invasive

nature and ease of administration. These systems are adaptable for a wide range of drugs, making them suitable for treating various chronic conditions. The injectable segment is forecasted to grow the fastest, driven by advancements in targeted delivery technologies and minimally invasive techniques.

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Controlled Release Drug Delivery Market Segment Analysis

For the purpose of this report, Emergen Research has segmented the global RDD market on the basis of technology, application, mechanism and region:

Technology Outlook (Revenue, USD Billion; 2019-2032)

Wurster Technique

Coacervation

Micro Encapsulation

Implant

Transdermal

Targeted Delivery

Others

Mechanism Outlook (Revenue, USD Billion; 2019-2032)

Polymer based System

Micro Reservoir Partition Controlled Drug Delivery System

Feedback Regulated Drug Delivery System

Activation Modulated Drug Delivery System

Osmotic Pressure Activated

Hydrodynamic Pressure Activated

Vapor pressure Activated

Mechanically Activated

Magnetically Activated

Chemically Activated

potential of Hydrogen (pH)

Hydrolysis

Enzyme Activated

Application outlook (Revenue, USD Billion; 2019-2032)

Oral Controlled Drug Delivery

Injectable

Transdermal and Ocular Patches

Infusion Pump

Drug Eluting Stents

Metered Dose Inhaler

Regional Outlook (Revenue, USD Billion; 2019–2032)

North America

U.S.

Canada

Europe

Germany

France

UK

Italy

Spain

Benelux

Russia

Rest of Europe

Asia Pacific

China

Japan

South Korea

India

ASEAN Countries

Oceania

Rest of APAC

Latin America

Brazil

Mexico

Rest of LATAM

Middle East & Africa

GCC Countries

Israel

Turkey

South Africa

Rest of Middle East & Africa

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The Controlled Release Drug Delivery Market is poised for significant growth, driven by technological innovations and the increasing prevalence of chronic diseases. Advances in nanoparticle systems, AI, and ML are transforming drug delivery, offering more effective, personalized treatments. However, overcoming regulatory challenges will be crucial for sustained market expansion.

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