

DNA origami protection and molecular interfacing through engineered sequence

DNA origami nanorulers are used to demonstrate the capabilities of techniques and are valuable training samples.

VANCOUVER, BC, CANADA, April 26, 2022 /EINPresswire.com/ -- DNA origami is one of the most recent and rapidly developing techniques of using DNA as building blocks for synthesizing nanoparticles. [DNA origami Industry](#) is the nanoscale folding of a very long strand of DNA to create 2D and 3D structures at nanoscale. The formed structures have characteristic features owing to their nanoscale dimensions and have been widely used in wide range of fields such as diagnosis and drug delivery. DNA origami has played a crucial role and exhibit robust anticancer efficacy in cancer diagnosis and therapy and rising incidence of cancer across the globe has further boosted its application and is expected to drive market revenue growth over the forecast period. DNA origami structures have the capabilities to enhance efficacy of chemotherapy, reduce adverse side effects, and reduce drug resistance and increasing research and development activities to expand application scope of DNA origami structures such as use as biosensors or drug carriers are some other factors expected to contribute to revenue growth of the market going ahead.



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DNA origami uses long scaffold of single stranded DNA comprising nearly 8000 nucleotides which is then hybridized into 2D and 3D shapes. DNA origami is a breakthrough technique in molecular nanotechnology and provides an easier and faster way to construct DNA nanostructures with various shapes. Over the recent past, extensive research has been carried out in developing DNA origami nanostructures of various shapes and sizes and have led to the development of mesh-like wireframe DNA origami structure that are stable in low magnesium concentrations. DNA origami structures are promising nanostructures and have been explored for various applications such as single-molecular studies, enzymatic studies, nano-assembly

lines, as drug carriers, and organization of amyloid fibrils and these are some other factors that can drive revenue growth of the market going ahead. However, low yield, small production scale, and high cost of synthetic DNA can limit the adoption of this technique and restrain market growth to a certain extent over the forecast period. In addition, lack of user-friendly and standardized design for DNA origami and high costs of DNA synthesis and sequence design are some other factors that can hamper market revenue growth.

Major Companies in the Market Include:

DNA Technologies IDT

Tilibit Nanosystems

Eurofins Genomics

Twist Bioscience Corporation

GATTAquant DNA Technologies

Dietz Lab

ADINA R&D, Inc.

Technalia

Kosuri Lab

Cees Dekkar Lab

Others

COVID-19 Impact Analysis

The virus outbreak and social distancing norms and restrictions severely disrupted the overall business landscape and operations worldwide.

COVID-19 pandemic and lockdowns have resulted in several countries shutting down airports, ports, and commercial and domestic transportation. This had impacted manufacturing activities and operations globally and took a toll on the economy of various countries.

Sudden and drastic downturn in economic activity caused a slowdown in manufacturing, production, import/export, and other sectors and also resulted in employment loss to a major extent.

Supply impacts were further compounded due to challenges on the demand-side owing to reduced disposable income, depleting savings, and increased concerns and uncertainties.

Emergence of variants of the virus and rise in infection rates during the initial waves and subsequent lockdowns has severely impacted operations and disrupted supply chains.

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Single Stranded Scaffold DNA Segment to Register Rapid Revenue CAGR:

Single-stranded scaffold DNA segment is expected to register rapid revenue CAGR over the forecast period attributable to increasing availability of single-stranded scaffold DNA of varying lengths for specific experiments, advancements in designing a single-stranded DNA for DNA origami, and easy designing of large scale complex structures. Single-stranded DNA scaffold offer greater potential of amplification, replication, and cloning and can contribute to cost-efficient and large scale production.

Nanorobots and Fluorescence Studies Segment Revenue to Support Market Growth:
Nanorobots and fluorescence studies segment is expected to register significant revenue growth over the forecast period attributable to increasing use of DNA origami to construct DNA nanorobots, growing application of nanorobots as smart drugs, and rapid advancements in biomedicine and nanomedicine.

North America to Lead in Terms of Revenue Share:

North America is expected to account for largest revenue share in the global market over the forecast period attributable to increasing investment in biomedical research and development activities, rapid progress in nanotechnology and development of nanorobots, growing incidence of cancer and other chronic conditions, and increasing focus on using DNA origami to advance targeted treatments and reduce side effects associated with them.

For the purpose of this report, Emergen Research has segmented the global DNA origami market on the basis of type, structure, application, and region:

Type Outlook (Revenue, USD Million; 2018-2028)

Single-stranded Scaffold DNA

Folding Kits

Staple Strand Oligos

Structure Outlook (Revenue, USD Million; 2018-2028)

Static

Active

Application Outlook (Revenue, USD Million; 2018-2028)

Nanorobots and Fluorescence Studies

Enzyme-substrate Studies

Studies of Molecular Motors

Light, Energy, and Microscopy Studies

DNA Origami Drug Delivery

Biosensors

Others

Click to access the Report Study, Read key highlights of the Report and Look at Projected Trends:

<https://www.emergenresearch.com/industry-report/dna-origami-market>

Regional Outlook (Revenue, USD Million; 2018-2028)

North America

US.

Canada

Mexico

Europe
Germany
UK.
France
Italy
Spain
Sweden
BENELUX
Rest of Europe
Asia Pacific
China
India
Japan
South Korea
Rest of APAC
Latin America
Brazil
Rest of LATAM
Middle East & Africa
Saudi Arabia
A.E.
South Africa
Israel
Rest of MEA

Key Points Covered in This Section:

Regional contribution

Estimated revenue generation

Vital data and information about the consumption rate in all the leading regional segments

An expected rise in market share

Forecast growth in the overall consumption rate

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