

# Optogenetics Market Report by Light Equipment Type (Light-emitting Diode (LED), Laser), Application (Neuroscience, Behavioral Tracking, Retinal Disease Treatment, and Others), End User (Hospitals, Clinics, Diagnostic, Research, and Others), and Region 2024-2032

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## Abstracts

The global optogenetics market size reached US\$ 44.8 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 158.7 Billion by 2032, exhibiting a growth rate (CAGR) of 14.8% during 2024-2032.

Optogenetics refers to a scientific approach that includes a combination of genetics and optics technologies. It is primarily used for controlling and monitoring the biological functions of neurons and other types of cells with light sensors. This information provides insights into individual behavior and physiology, including movement, learning, memory, navigation, metabolism, respiration, and sensor processing. Optogenetics aids in clinical discoveries by shedding light on the cellular activities associated with various diseases, such as chronic pain, epilepsy, Parkinson disease, stroke, drug addiction, obsessive compulsion disorder (OCD), social dysfunction, and anxiety and depression. On account of these applications, optogenetics finds extensive utilization in the field of neurosciences.

### Optogenetics Market Trends:

The increasing prevalence of neurological disorders due to various infections, ailments, genetic disorders, congenital abnormalities, and brain, nerve, and spinal cord injuries is one of the key factors currently driving the optogenetics market growth. In line with this, the introduction of fiber-coupled light-emitting diode (LED) for being incorporated into

the implants to enable the untethered light delivery is acting as another major growth-inducing factor. Additionally, rapid technological advancements in neural connectivity, wireless microchip, sensors, cell phenotyping tools, and various imaging tools, like computed tomography (CT), position emission tomography (PET), and magnetic resonance imaging (MRI) to precisely evaluate organs and tissues for identifying disorders is propelling the market growth. The rising inclination of healthcare professionals toward optogenetic therapeutic methodologies on account of its cellular, spatial, and temporal precision is further contributing to the market growth. Other factors, including increasing healthcare expenditure, extensive research and development (R&D) activities in the field of neurosciences, and strategic collaborations between key players, pharmaceutical companies, and governments of various nations to implement favorable policies that support the launch of novel drugs for treating neurological diseases, are creating a positive outlook for the market.

#### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each sub-segment of the global optogenetics market report, along with forecasts at the global, regional and country level from 2024-2032. Our report has categorized the market based on light equipment type, application and end user.

#### Breakup by Light Equipment Type:

- Light-emitting Diode (LED)
- Laser

#### Breakup by Application:

- Neuroscience
- Behavioral Tracking
- Retinal Disease Treatment
- Others

#### Breakup by End User:

- Hospitals
- Clinics
- Diagnostic
- Research
- Others

## Breakup by Region:

North America

United States

Canada

Asia-Pacific

China

Japan

India

South Korea

Australia

Indonesia

Others

Europe

Germany

France

United Kingdom

Italy

Spain

Russia

Others

Latin America

Brazil

Mexico

Others

Middle East and Africa

## Competitive Landscape:

The competitive landscape of the industry has also been examined along with the profiles of the key players being Addgene, Coherent Inc., Elliot Scientific Limited, GenSight Biologics S.A., H?BNER GmbH & Co KG, Judges Scientific plc, Laserglow Technologies, Noldus Information Technology, Regenxbio Inc., Shanghai Laser & Optics Century Co. Ltd, The Jackson Laboratory and Thorlabs Inc.

## Key Questions Answered in This Report

1. What was the size of the global optogenetics market in 2023?
2. What is the expected growth rate of the global optogenetics market during

2024-2032?

3. What are the key factors driving the global optogenetics market?
4. What has been the impact of COVID-19 on the global optogenetics market?
5. What is the breakup of the global optogenetics market based on the light equipment type?
6. What is the breakup of the global optogenetics market based on the application?
7. What are the key regions in the global optogenetics market?
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