+357 96 030922
info@marketpublishers.com

AI Geroprotector Discovery Market Forecasts to 2032 – Global Analysis By Therapeutic Area (Geriatric Diseases & Age-related Frailty, Cardiovascular Diseases, Neurodegenerative Diseases, Metabolic Diseases, Oncology and Other Age-related Therapeutic Areas), Technology (Machine Learning, Generative AI and Graph-Based AI & Knowledge Graphs), Application, End User and By Geography

https://marketpublishers.com/r/A8EB9974E51CEN.html
Date: September 2025
Pages: 200
Price: US$ 4,150.00 (Single User License)
ID: A8EB9974E51CEN

Abstracts

According to Stratistics MRC, the Global AI Geroprotector Discovery Market is accounted for $316 million in 2025 and is expected to reach $1628 million by 2032 growing at a CAGR of 26.4% during the forecast period. AI Geroprotector Discovery refers to the application of artificial intelligence and machine learning to identify, screen, and optimize compounds or interventions that can slow, prevent, or reverse aging-related processes. By analyzing vast biological datasets, AI enables faster prediction of geroprotective potential, reduces trial-and-error in drug development, and accelerates precision targeting of aging mechanisms.

Market Dynamics:

Driver:

Rising global aging population

The escalating global geriatric demographic is a primary driver for the AI geroprotector discovery market. This population cohort exhibits a heightened prevalence of age-

+357 96 030922
info@marketpublishers.com

related disorders, thereby amplifying the demand for innovative therapeutic interventions that target the biological mechanisms of aging. Additionally, this demographic shift imposes a significant strain on healthcare systems, creating an urgent need for efficacious and preventative anti-aging solutions. Consequently, the rising aging population directly fuels investment and research into AI-driven discovery of geroprotectors, which promise to extend healthspan and mitigate the economic burden associated with age-related morbidity.

Restraint:

High initial capital investment for technology infrastructure

The development and application of AI algorithms for drug discovery necessitate access to high-performance computing (HPC) systems, vast data storage solutions, and specialized software, all of which entail exorbitant costs. The recruitment of a highly skilled workforce comprising data scientists, computational biologists, and AI specialists further escalates operational expenditures. This high financial barrier effectively consolidates market presence among well-funded established players and constrains the participation of small and medium-sized enterprises (SMEs), potentially stifling innovation.

Opportunity:

Development of personalized geroprotective regimens

AI algorithms can be leveraged to analyze multi-omics data, lifestyle factors, and clinical histories to identify patient-specific aging biomarkers and predict individual responses to potential geroprotectors. This capability facilitates the development of highly tailored therapeutic regimens that maximize efficacy and minimize adverse effects. Furthermore, this personalized approach allows for the stratification of patient populations in clinical trials, enhancing trial design and accelerating the path to regulatory approval for novel, targeted anti-aging compounds.

Threat:

The "Black Box" problem and interpretability of AI predictions

When AI systems generate a potential geroprotector candidate without providing clear, interpretable insights into the underlying biological rationale, it creates significant

+357 96 030922
info@marketpublishers.com

hurdles. Regulatory bodies like the FDA and EMA require a comprehensive understanding of a drug's mechanism of action for approval. This opacity can erode trust among clinicians and researchers, potentially delaying clinical translation and limiting the widespread integration of AI-derived discoveries into mainstream therapeutic development pipelines.

Covid-19 Impact:

The COVID-19 pandemic had a dual impact on the AI geroprotector discovery market. Initially, it disrupted research activities and supply chains, causing temporary delays in non-COVID-related projects. However, it subsequently acted as a significant accelerator by underscoring the critical role of advanced computational approaches in rapid drug discovery and repurposing. The pandemic highlighted the vulnerabilities of the elderly population to novel pathogens, thereby reinforcing the importance of research into healthspan extension. This led to increased investor interest and funding directed towards AI-powered biotechnology platforms, ultimately netting a positive long-term effect on market growth.

The machine learning (ML) segment is expected to be the largest during the forecast period

The machine learning (ML) segment is expected to account for the largest market share during the forecast period due to its unparalleled proficiency in identifying complex, non-linear patterns within vast biological datasets. ML algorithms, particularly deep learning networks, are exceptionally adept at processing high-throughput screening data, genomic sequences, and proteomic profiles to predict the geroprotective efficacy and toxicity of novel molecules. Their ability to continuously learn and improve from new data makes them indispensable for target identification, lead optimization, and biomarker discovery. This versatility and proven effectiveness in other drug discovery domains solidify ML's position as the largest segment.

The oncology segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the oncology segment is predicted to witness the highest growth rate, driven by the profound intersection between aging and carcinogenesis. Aging is a primary risk factor for cancer, as the accumulation of cellular damage and senescence creates a permissive environment for tumorigenesis. Many geroprotectors, such as senolytics, exhibit strong anti-cancer potential by selectively eliminating premalignant senescent cells. The high incidence of cancer within the aging population

+357 96 030922
info@marketpublishers.com

presents a clear clinical pathway and a substantial addressable market for AI-discovered therapies that can simultaneously target fundamental aging processes and oncogenesis, which is fueling the segment growth.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, attributed to its synergistic confluence of leading pharmaceutical and biotechnology companies, world-class academic research institutions, and a robust venture capital ecosystem. Moreover, the presence of a supportive regulatory framework, particularly from the U.S. FDA, which is increasingly open to AI-derived drug development tools, facilitates market growth. The region's advanced healthcare infrastructure and high healthcare expenditure further enable the adoption of cutting-edge AI technologies, consolidating its position as the frontrunner in the AI geroprotector discovery landscape.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, fueled by a significant expansion in its biotechnology and pharmaceutical sectors, increasing government initiatives aimed at fostering AI innovation in healthcare, and a rapidly aging population in countries like Japan and China. Additionally, the rising prevalence of age-related diseases is creating an urgent need for effective gerotherapeutic interventions. The growing investment in AI startups and the establishment of strategic partnerships between regional and global players are key factors catalyzing the market's accelerated expansion in this region.

Key players in the market

Some of the key players in AI Geroprotector Discovery Market include Insilico Medicine, Deep Longevity, Juvenescence, BioAge Labs, Calico, Recursion Pharmaceuticals, BenevolentAI, Xaira Therapeutics, Arda Therapeutics, InVivo Biosystems, Gero, Helix, Valo Health, Exscientia, Atomwise and BERG.

Key Developments:

In June 2025, BioAge has launched an initiative to analyze over 17,000 samples from the HUNT Biobank in Norway to accelerate discovery of drug targets targeting the biology of aging. This molecular profiling is expected to expand insights and identify

+357 96 030922
info@marketpublishers.com

novel therapeutic targets for aging-related diseases.

In April 2024, AI-based drug developer Xaira Therapeutics has been launched with more than $1 billion in capital and a self-described ambitious commitment to transform drug discovery and development by creating new and more effective treatments faster.

Therapeutic Areas Covered:

- Cardiovascular Diseases
- Neurodegenerative Diseases
- Metabolic Diseases
- Oncology
- Other Age-related Therapeutic Areas

Technologies Covered:

- Machine Learning (ML)
- Generative AI
- Graph-Based AI & Knowledge Graphs

Applications Covered:

- Target Identification & Validation
- Lead Generation & Optimization
- Drug Repurposing
- Biomarker Discovery & Aging Clocks
- Toxicity & Safety Prediction

+357 96 030922
info@marketpublishers.com

- Preclinical Testing

End Users Covered:

- Pharmaceutical and Biotechnology Companies
- Contract Research Organizations (CROs)
- Academic and Research Institutions
- Longevity-focused Startups & Clinics

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe

+357 96 030922
info@marketpublishers.com

- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific
- South America
  - Argentina
  - Brazil
  - Chile
  - Rest of South America
- Middle East & Africa
  - Saudi Arabia
  - UAE
  - Qatar
  - South Africa
  - Rest of Middle East & Africa

+357 96 030922
info@marketpublishers.com

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

+357 96 030922
info@marketpublishers.com

Contents

+357 96 030922
info@marketpublishers.com

+357 96 030922
info@marketpublishers.com

9 GLOBAL AI GEROPROTECTOR DISCOVERY MARKET, BY GEOGRAPHY

+357 96 030922
info@marketpublishers.com

10 KEY DEVELOPMENTS

11 COMPANY PROFILING

+357 96 030922
info@marketpublishers.com

List Of Tables

LIST OF TABLES

+357 96 030922
info@marketpublishers.com

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

+357 96 030922
info@marketpublishers.com

I would like to order

Product name: AI Geroprotector Discovery Market Forecasts to 2032 – Global Analysis By Therapeutic Area (Geriatric Diseases & Age-related Frailty, Cardiovascular Diseases, Neurodegenerative Diseases, Metabolic Diseases, Oncology and Other Age-related Therapeutic Areas), Technology (Machine Learning, Generative AI and Graph-Based AI & Knowledge Graphs), Application, End User and By Geography

Product link: https://marketpublishers.com/r/A8EB9974E51CEN.html

Price: US$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:
info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page https://marketpublishers.com/r/A8EB9974E51CEN.html