

High-Throughput Screening (HTS) Market by Instruments (Liquid Handling, Detection, Imaging), Consumables (Reagents, Kits), Software, Services, Technology (Cell-based, High-content, Label-free), Workflow, Application, Competition - Global Forecast to 2031

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Report description:

The high-throughput screening (HTS) market is expected to reach USD 45.90 billion in 2031 from USD 27.66 billion in 2026, growing at a CAGR of 10.7% during the forecast period. Factors such as the rising adoption of open innovation models, increasing government funding and venture capital investments, and higher R&D spending by pharmaceutical and biotechnology companies. Technological advancements in automation, high-content screening, cell-based assays, label-free detection, and AI-enabled data analysis are further improving screening efficiency and supporting wider adoption of HTS platforms across drug discovery workflows.

<https://mnmimg.marketsandmarkets.com/Images/high-throughput-screening-market-img-overview.webp>

By offering, the products segment accounted for the largest share of the high-throughput screening (HTS) market in 2025. Based on offering, the high-throughput screening (HTS) market is segmented into products and services. In 2025, the products segment held the largest share of the high-throughput screening (HTS) market. This is driven by recurring demand for assay kits, reagents, consumables, microplates, compound libraries, instruments, software, and automation platforms. The segment remains dominant because HTS workflows require continuous use of consumables and integrated instruments throughout assay development, screening, data analysis, and hit confirmation. Strong adoption of automated liquid handlers, microplate readers, high-content imaging systems, and assay-ready kits further supports the revenue contribution of products in the HTS market.

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By application, the drug discovery & development segment accounted for the largest share of the high-throughput screening (HTS) market in 2025.

By application, the high-throughput screening (HTS) market is divided into drug discovery & development, basic research & functional genomics, toxicology & safety screening, precision medicine & biomarker discovery, stem cell & regenerative medicine research, and other applications. In 2025, the drug discovery & development segment held the largest share of the high-throughput screening (HTS) market, as HTS is widely used to screen large compound libraries, identify hits, validate targets, and support lead optimization. Pharmaceutical and biotechnology companies continue to rely on HTS platforms to improve early-stage discovery productivity and reduce the time required to move candidates into preclinical development. The segment also benefits from the growing use of phenotypic screening, cell-based assays, 3D models, and high-content imaging to identify more biologically relevant drug candidates.

The Asia Pacific region is expected to grow at the highest CAGR in the high-throughput screening (HTS) market from 2026 to 2031.

The high-throughput screening (HTS) market is divided into North America, Europe, Asia Pacific, Latin America, the Middle East, and Africa. The Asia Pacific region is expected to grow at a significant CAGR during the forecast period. This increase is driven by expanding pharmaceutical and biotechnology R&D activity, growing CRO presence, and increasing investments in drug discovery infrastructure. Countries such as China, India, Japan, and South Korea are strengthening their screening capabilities through rising research funding, outsourcing demand, and the adoption of automated laboratory technologies. The region is also benefiting from cost-efficient research operations, expanding biotech start-up activity, and increasing partnerships between global pharma companies and local discovery service providers.

The primary interviews conducted for this report can be categorized as follows:

-□By Respondent: Supply Side (80%) and Demand Side (20%)

-□By Designation: Managers (45%), CXOs & Directors (30%), and Executives (25%)

-□By Region: North America (40%), Europe (25%), Asia Pacific (25%), Latin America (5%), the Middle East & Africa (5%)

Thermo Fisher Scientific Inc. (US), Agilent Technologies, Inc. (US), Merck KGaA (Germany), Danaher Corporation (US), Revvity, Inc. (US), Tecan Group Ltd. (Switzerland), Bio-Rad Laboratories, Inc. (US), Corning Incorporated (US), Mettler-Toledo International Inc. (US), Lonza Group (Switzerland), Waters Corporation (US), Sartorius AG (Germany), Eppendorf SE (Germany), Porvair Plc (UK), Greiner AG (Austria), Charles River Laboratories (US), Eurofins Scientific (Luxembourg), and Hamilton Company (US) are some of the key companies offering HTS solutions.

Research Coverage

This research report categorizes the high-throughput screening (HTS) market by offering (products and services), products by type (instruments; reagents, kits, and consumables; software & informatics; and services), products by technology (biochemical screening technologies, cell-based screening technologies, high-content screening (HCS) technologies, label-free screening technologies, microfluidic & miniaturized screening technologies, 3D cell culture & advanced cellular model technologies, ultra-high-throughput & automation technologies, and AI-enabled & computational screening technologies), products by workflow (assay development & optimization, compound library preparation, high-throughput screening, data analysis & hit identification, hit confirmation, hit validation & characterization), products by end user (pharmaceutical & biotechnology companies, CROs & CDMOs, academic & research institutes, and other end users), services by type (assay development & optimization services, compound library management services, primary screening services, secondary screening & hit confirmation services, hit validation & characterization services, data analysis & informatics services, and other services), services by end user (pharmaceutical & biotechnology companies, academic & research institutes, and other end users), application (drug discovery & development, basic research & functional genomics, toxicology & safety screening, precision medicine & biomarker discovery, stem cell & regenerative medicine research, and other applications), and region (North America, Europe, Asia Pacific, Latin America, Middle East, and Africa).

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The scope of the report provides detailed information on major factors such as drivers, challenges, opportunities, and restraints that influence the growth of the high-throughput screening (HTS) market. A comprehensive analysis of key industry players has been conducted to provide insights into their business overviews, product/service portfolios, and key strategies, including collaborations, partnerships, expansions, agreements, acquisitions, and recent developments in the high-throughput screening (HTS) market. This report includes a competitive analysis of top players and upcoming startups in the high-throughput screening (HTS) market ecosystem. The report also details primary factors like drivers, restraints, challenges, and opportunities shaping the market growth, along with an in-depth review of key industry players' solutions, products, recent product launches, mergers, acquisitions, and emerging market trends ecosystem.

Key Benefits of Buying the Report

This report offers a comprehensive overview of the high-throughput screening (HTS) market. It aims to assess the market size and future growth opportunities across various segments. The report also features an in-depth competitive analysis of the major market players, including their company profiles, recent developments, and key market strategies.

The report provides insights into the following pointers:

Analysis of key drivers (growing adoption of open innovative models, growing R&D funding and increasing public & private investments, growing adoption of lab automation and robotic screening platforms, and increasing outsourcing of screening activities to CROs and HTS service providers), restraints (high costs associated with HTS instruments and complexity in assay development and validation), opportunities (increasing adoption of HTS technologies in emerging markets and growing application of HTS in drug repurposing and personalized medicine), and challenges (complexity in data management & analysis, standardization challenges in 3D, organoid, and image-based assays)

- Product/Service Development/Innovation: Detailed insights on newly launched products/services, and technological assessment of the high-throughput screening (HTS) market.

- Market Development: Comprehensive information about lucrative markets; the report analyzes the high-throughput screening (HTS) market across varied regions.

- Market Diversification: Exhaustive information about new, untapped geographies, recent developments, and investments in the high-throughput screening (HTS) market

Competitive Assessment: In-depth assessment of market shares, growth strategies, and product offerings of leading players such as Thermo Fisher Scientific Inc. (US), Agilent Technologies, Inc. (US), Merck KGaA (Germany), Danaher Corporation (US), Revvity, Inc. (US), Tecan Group Ltd. (Switzerland), Bio-Rad Laboratories, Inc. (US), Corning Incorporated (US), Mettler-Toledo International Inc. (US), Lonza Group (Switzerland), Waters Corporation (US), Sartorius AG (Germany), Eppendorf SE (Germany), Porvair Plc (UK), Greiner AG (Austria), Charles River Laboratories (US), Eurofins Scientific (Luxembourg), and Hamilton Company (US), among others, in the high-throughput screening (HTS) market.

The report also helps stakeholders understand trends in the high-throughput screening (HTS) market and provides information on key drivers, restraints, challenges, and opportunities. A detailed analysis of the key industry players has been conducted to offer insights into their strategies, product/service launches, acquisitions, partnerships, collaborations, recent activities, investments, funding, brand and product comparisons, vendor evaluations, and financial metrics of the HTS sector market.

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