GPCR Structure-Based Drug Design Market Report 2025: Trends, Growth Drivers & Future Forecast Insights

The Business Research Company's GPCR Structure-Based Drug Design Market Report 2025: Trends, Growth Drivers & Future Forecast Insights

The Business Research Company

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G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Market Growth Forecast: What To Expect By 2025?

> Expected to grow to $4.33 billion in 2029 at a compound annual growth rate (CAGR) of 13.1%”
>
> *The Business Research Company*

In the past few years, the market size of the structure-based drug design approach for G protein-coupled receptors (GPCR) has been expanding rapidly. The market value, currently at $2.33 billion in 2024, is forecasted to escalate to $2.64 billion by 2025, exhibiting a compound annual growth rate (CAGR) of 13.5%. Factors contributing to this surge in the historic period include the increasing utilization of structure-based drug discovery techniques, heightened demand for specific therapeutic interventions, rising incidences of chronic illnesses, escalating healthcare expenditure, and the growth of approaches centered on the use of biomarkers in drug development.

In the coming years, we can anticipate a significant expansion of the G protein-coupled receptors (GPCR) structure-based drug design market. Predictions show that its value will soar to $4.33 billion by 2029, reflecting a compound annual growth rate (CAGR) of 13.1%. Factors contributing to this surge during the projected period include the proliferating demand for tailor-made medication, the widening scope of contract research organizations (CROs), escalating funds for drug discovery, the upswing in collaboration between biotech and pharmaceutical sectors, and the increasing necessity for precision drugs. Key trends during this period are expected to be

technological leaps in cryo-electron microscopy and x-ray crystallography, revolutionary strides in computational docking software, advancements in AI-driven drug formulation, investment poured into high-throughput screening platforms, and innovations in peptide and antibody treatments.

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What Are Key Factors Driving The Demand In The Global G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Market?
The growth of the G protein-coupled receptors (GPCR) structure-based drug design market is likely to be fueled by the burgeoning demand for precision medicine. Precision medicine uses distinct biological markers to guide the creation and choice of treatments customized to the individual patient's characteristics and disease profiles. This growing demand is attributed to their higher efficacy and lesser side effects compared to conventional treatments, given that the focus in healthcare is progressively shifting towards personalized strategies that target specific molecular pathways over general wide-ranging interventions. This increased focus on precision medicine indirectly speeds up the uptake of GPCR structure-based drug design platforms because pharmaceutical firms require advanced computational tools to identify and refine receptor-specific compounds capable of delivering the molecular accuracy demanded by tailor-made treatment strategies. For example, in February 2024, the Personalized Medicine Coalition, a non-profit organization based in the US noted that in 2023, the FDA gave approval to 16 fresh personalized treatments aimed at rare diseases patients, a dramatic rise from the six approvals in 2022. Among these approvals, seven are cancer drugs, while three are targeted at other diseases and conditions. Consequently, the growing demand for precision medicine is a significant driver for the expansion of the G protein-coupled receptors (GPCR) structure-based drug design market.

Who Are The Leading Players In The G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Market?
Major players in the G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Global Market Report 2025 include:

- F. Hoffmann-La Roche Ltd.
- Pfizer Inc.
- Sanofi S.A.
- AstraZeneca plc
- Thermo Fisher Scientific Inc.
- Boehringer Ingelheim International GmbH
- WuXi AppTec Co. Ltd.
- Charles River Laboratories International Inc.
- Evotec SE

• Acadia Pharmaceuticals Inc.

What Are The Key Trends Shaping The G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Industry?
Leading businesses active in the GPCR structure-based drug design market are concentrating on creating revolutionary solutions, such as structure-based drug design platforms. These platforms speed up new drug discovery and enhance therapeutic targeting by utilizing the target proteins' 3D structure to design and refine drug candidates, assisting in the identification of safer, more precise, and effective treatments. For example, in January 2025, Septerna Inc., a pharmaceutical firm headquartered in the U.S., set in motion new initiatives to progress its Native Complex Platform, following the successful procurement of $100 million series A funding. This platform facilitates structure-based drug designing for GPCRs while preserving their natural structure and movement outside the cellular environment. It backs the development of a line-up of GPCR-targeted treatments aimed at previously untreatable targets in various therapeutic fields. Moreover, it also provides a scalable basis for industrialized drug discovery, integration of innovative screening technologies, and unearthing new GPCR modulation mechanisms. The platform paves the way to a broader spectrum of therapeutic interventions by creating chances to systematically examine the entire GPCR superfamily.

Analysis Of Major Segments Driving The G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Market Growth
The G protein-coupled receptors (GPCR) structure-based drug design market covered in this report is segmented as

1) By Drug Type: Small Molecule Drugs, Biologics, Peptides, Other Drug Types
2) By Technology: X-Ray Crystallography, Cryo-Electron Microscopy, Computational Modeling, Nuclear Magnetic Resonance Spectroscopy, Other Technologies
3) By Application: Oncology, Cardiovascular Diseases, Neurological Disorders, Metabolic Disorders, Other Applications
4) By End-User: Pharmaceutical Companies, Biotechnology Companies, Academic And Research Institutes, Other End-Users

Subsegments:
1) By Small Molecule Drugs: Agonists, Antagonists, Allosteric Modulators, Enzyme Inhibitors
2) By Biologics: Monoclonal Antibodies, Therapeutic Proteins, Vaccines, Fusion Proteins
3) By Peptides: Linear Peptides, Cyclic Peptides, Modified Peptides, Peptidomimetics
4) By Other Drug Types: Nucleic Acid Based Drugs, Cell Based Therapies, Gene Therapies, Conjugated Drugs

View the full g protein-coupled receptors (gpcr) structure-based drug design market report: https://www.thebusinessresearchcompany.com/report/g-protein-coupled-receptors-gpcr-structure-based-drug-design-global-market-report

Which Region Is Expected To Lead The G Protein-Coupled Receptors (GPCR) Structure-Based Drug Design Market By 2025?
In the 2025 Global Market Report for GPCR Structure-Based Drug Design, North America was projected to be the dominant region. The report covers all major global regions, including Asia-Pacific, Western Europe, Eastern Europe, South America, as well as the Middle East and Africa.

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