

Global G-Protein Coupled Receptors (GPCR) - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2021 - 2029

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Report description:

The Global G-Protein Coupled Receptors Market size is estimated at USD 6.11 billion in 2024, and is expected to reach USD 8.58 billion by 2029, growing at a CAGR of 7.01% during the forecast period (2024-2029).

Key Highlights

- The SARS-CoV-2 virus enters the body through the respiratory tract epithelium, mainly the lungs, and spreads to other organs through hematogenous expansion, causing multiorgan injury. The viral vector loading targeting Na⁺/H⁺ exchanger regulatory factor 1 (NHERF1) and -arrestin can disrupt the assembly of certain sensory G-protein coupled receptor (GPCR) signalosomes, resulting in disordered cellular responses such as loss of smell and taste.
- This has led researchers to investigate the role of GPCRs in alleviating COVID-19 symptoms. GPCR-targeted drugs have shown potential in reducing the pathogenic symptoms associated with COVID-19, leading to market growth during the initial phase of the pandemic. However, as the pandemic has subsided, research and development activities have slowed down, causing the studied market to lose some traction, but it is expected to have stable growth during the forecast period.
- The G-protein coupled receptors market is anticipated to be driven by the increasing number of cancer cases, cardiovascular infections, and respiratory issues. GPCRs play a crucial role in the development of new medications. According to the American Heart Association's 2021 Journal, more than 130 million adults in the United States are expected to have some type of heart disease by 2035. The Heart and Stroke Foundation of Canada's February 2022 report states that 750,000 people are living with heart failure in Canada, and 100,000 people are diagnosed with this incurable condition each year.
- A press release by Septerna in 2021 mentioned that GPCRs are one of the most prolific drug targets, representing approximately one-third of all approved drugs, and currently extend across all major disease areas. Septerna launched a financing of USD 100 million in January 2022 to advance its emerging pipeline of novel GPCR-targeted drug programs spanning multiple therapeutic areas.

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-In April 2021, Tectonic Therapeutic raised USD 80 million in financing to unlock the full potential of GPCR-targeted therapies with biologics. These activities by market players are likely to contribute to market growth over the forecast period. Furthermore, strategic collaborations among market players are expected to boost market growth.

-For example, in December 2022, Sosei Heptares and Eli Lilly launched a drug discovery collaboration to discover, develop, and commercialize small compounds that modify novel G protein-coupled receptor (GPCR) targets related to diabetes and metabolic disorders. In August 2022, Sosei Group Corporation and AbbVie announced a new drug development cooperation and option-to-license agreement to identify, develop, and market small compounds modulating novel G protein-coupled receptor (GPCR) targets linked to neurological illness.

-Despite the market's potential for growth, the high cost involved in maintaining GPCR cell lines and the complexity of the GPCR signaling system may impede market growth.

G-protein Coupled Receptors Market Trends

Oncology by Application Segment is Estimated to Hold a Significant Share of the Market Over Forecast Period

- According to a November 2021 article published by PubMed Central, there are more than 700 genes that make up the G-protein-coupled receptors (GPCRs), which constitute the largest family of cell surface signaling receptors in the human genome. These receptors play a vital role in various physiological functions, including sensory modulations and hormonal responses. Recent research has shown that GPCR signaling affects different aspects of cancer biology, such as invasion, migration, and vascular remodeling. GPCRs are important in many types of cancer, contributing to cancer proliferation, angiogenesis, invasion, and metastasis.

- Another article published in the Journal of Current Opinion in Endocrine and Metabolic Research in February 2021 states that GPCRs regulate cellular functions that mediate cell survival, tumor progression, and metastasis, making them significant contributors to oncogenesis. Hence, the development of GPCR-targeted drugs is a promising novel therapeutic strategy for treating various types of cancers.

- To improve our understanding of tumorigenesis and oncogenesis and to help develop novel anti-cancer therapies, it is crucial to discern how G protein-coupled receptor kinases (GRKs) regulate GPCR activity in cancer cells. As GPCR signaling plays a significant role in tumor growth and metastasis, the oncology segment is expected to show growth over the forecast period. Targeting GPCRs and their signaling circuits for the new era of precision medicine and cancer immunotherapies is the focus of current and future research.

North America is Expected to Hold a Significant Share of the Market Over the Forecast Period

- North America is expected to experience significant growth during the forecast period, driven by the economically advanced and technologically developed countries of the United States, Canada, and Mexico. Increasing government investment in the biotechnology and biopharmaceutical sector is also contributing to the growth of the studied market in the region.

- The burden of chronic diseases, particularly in the cardiovascular and cancer applications, is increasing demand for advanced treatments and therapies, further supporting market growth in North America. In 2022, the American Cancer Society estimated that there would be 1.9 million new cancer cases and 609,360 cancer deaths in the United States alone. Similarly, the Canadian Cancer Statistics 2021 reported that approximately 2 in 5 Canadians will be diagnosed with cancer in their lifetime, and 1 in 4 will die from cancer. In 2021, an estimated 229,200 Canadians were diagnosed with cancer, and 84,600 died from cancer.

- The burden of cancer is driving emerging research and findings for advanced therapies, such as the use of designer receptors exclusively activated by a designer drug (DREADDs), which may support the clinical exploration of novel classes of drugs for the

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treatment of cancer patients and survivors. Additionally, research from Columbia.

G-protein Coupled Receptors Industry Overview

The G-protein coupled receptors (GPCR) market is moderately competitive, with several companies operating in this space. Despite facing various challenges, several biologics are currently under manufacturing processes. Market players are focusing on expanding their product portfolios by adopting inorganic growth strategies such as acquisitions, mergers, and partnerships. Abcam plc, Becton, Dickinson and Company, PerkinElmer Inc., Merck KGaA, Enzo Biochem Inc. (Enzo Life Sciences Inc.), Danaher (Molecular Devices LLC), Promega Corporation, BioInvenu Inc., and Thermo Fisher Scientific are some of the key market players among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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