Global Digital PCR - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Global Digital PCR Market size is estimated at USD 0.69 billion in 2024, and is expected to reach USD 1.51 billion by 2029, growing at a CAGR of 16.74% during the forecast period (2024-2029).

The most commonly used and reliable test for diagnosis of COVID-19 has been the Droplet Digital PCR test performed using nasopharyngeal swabs or other upper respiratory tract specimens, including throat swabs or, more recently, saliva for immunology assays. Thus, disease diagnosis using digital PCR emerged as a major focus for the management of the pandemic. In October 2021, the COVID-19 antigen test that detects SARS CoV-2 proteins in respiratory samples received an emergency-use authorization. Thus, the demand for digital droplet PCR increased significantly. These are more sensitive, and rapid in diagnosing the disease. In addition, in April 2020, Bio-Rad received FDA emergency use authorization for the Droplet Digital PCR SARS-CoV-2 Test Kit. Thus the demand for the Digital PCR is expected to drive the growth of the market.

The major factor attributing to the growth of the market is the rising diagnostics and screening tests of diseases like cancer, and infectious diseases, and the growing demand for parental testing and gene study. According to the GLOBOCAN report, in 2020, around 19.29 million people in the world are affected by cancer. The number is estimated to rise to 28.89 million cases by 2040. According to the International Diabetes Federation Diabetes Atlas Tenth edition 2021, in 2021, around 537 million adults all over the world were found to have diabetes; with the numbers projected to grow to 643 million by 2030 and 783 million by 2045. With the rising incidence of such diseases, the usage of the Digital PCR is expected to grow.

Thus the above mentioned factors are expected to drive the growth of the market during the forecast period. However, high cost of digital PCR devices are expected to restrain the growth of the market.

Digital PCR Market Trends

Droplet Digital PCR Segment to Dominate the Market Globally

Droplet digital PCR (ddPCR) is a method for performing digital PCR that is based on water-oil emulsion droplet technology. A sample is fractionated into 20,000 droplets, and PCR amplification of the template molecules occurs in each droplet. The ddPCR technology uses reagents and workflows similar to those used for most standard TaqMan probe-based assays. The massive sample partitioning is a key aspect of the ddPCR technique. Apart from the above-mentioned advantages of the ddPCR, factors that are propelling the segment growth are the increasing prevalence of cancer, and infectious diseases, and increasing funding and advancements in the biotechnology sector.

The growth of droplet digital PCR is mainly attributed to technological advancement and increasing demand. For instance, BioRAD'sproduct QX200 Droplet Digital PCR System provides absolute quantification of target DNA in digital form. These product measures gene expression level with exquisite precision detects rare DNA target copies and determines copy number variation with unrivaled accuracy. According to an article published in the National Institute of Health 2020, currently, during the COVID-19 pandemic droplet digital PCR is considered to be a gold standard for the diagnosis of COVID-19 infections, thus triggering the market demand for droplet digital PCR, boosting market growth.

Moreover, companies are launching products associated with droplet technology. In May 2020, Bio-Rad Laboratories Inc. received the United States Food and Drug Administration (FDA) Emergency Use Authorization for Droplet Digital PCR SARS-CoV-2 Test Kit. In addition, in 2019, Bio-Rad launched QX ONE droplet digital PCR system.

Hence, the above-mentioned factors are expected to boost the growth of the studied segment during the forecast period

North America Dominates the Market and Expected to do Same over the Forecast Period

North America is expected to dominate the overall market throughout the forecast period. The market growth is due to the factors such as the presence of key players, the high prevalence of chronic diseases in the region, and the established healthcare infrastructure. Furthermore, beneficial government initiatives and an increase in the number of research partnerships are some of the drivers expected to increase market growth. In this region, the United States has the maximum share due to supportive healthcare policies, high number of patients, and a developed healthcare market.

According to the American Cancer Society's 2021 report, about 1,898,160 cancer cases were diagnosed in 2021, which included 970,250 males and 927,910 females in the United States and 608,570 Americans who died from it. Thus, due to the high prevalence of cancer, the demand for diagnostics and treatment is also high in the country which is expected to drive the growth in the studied market in the United States.

Moreover, the growth can be attributed to the presence of sophisticated diagnostic laboratories and the high acceptance rate of novel assay technologies. There is a growing trend of genetic engineering and genomic research in academia and biotechnology industries of the United States. Moreover, increasing genomic research is primarily fueled by the high demand for targeted and precision medicine for the management of chronic disorders and the need for understanding the genetic and molecular basis of disease.

Initiatives like these are presenting a favorable environment for pharmaceutical and biotechnology firms to develop and market gene-based diagnostics and therapeutics. This, in turn, is projected to fuel the growth of digital PCR technologies, due to their wide applications in drug discovery, toxicity, and efficacy studies, as well as in general life science research.

Digital PCR Industry Overview

The digital PCR market is moderately competitive and consists of several major players. Some of the companies which are currently dominating the market are Bio-Rad Laboratories Inc., Thermo Fisher Scientific, Sysmex Corporation, Fluidigm Corporation, JN Medsys, QIAGEN, Merck KGaA, Stilla, and Avance Biosciences.

Additional Benefits:

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

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