

Market Analysis Microfluidic Device

1. Market Description and target group

The offer includes a microfluidic device and an interchangeable microfluidics chip that can be used for the production of RNAi-based therapeutics and in vitro testing of siRNA. In addition to the microfluidics chip offered, any other chip can be inserted into the device, and therefore, other drug candidates can be tested. Both functional components will be available in Europe and the USA. The products offered are designed for all laboratory facilities and institutions involved in the development of therapeutics.

2. Overviews and developments in the microfluidics market

According to the market analysis of Precedence Research, the value of the global microfluidics market is USD 18 billion in 2021 and will reach about USD 62 billion in 2030 with a Compound Annual Growth Rate (CAGR) of 16,5% (Microfluidics Market Size, Growth, Trends, Report 2021-2030, n.d.).

The microfluidics market can be divided into several segments. These include material (e.g., glass, silicone, polymer), application (e.g., clinical diagnostics, drug delivery), industry (e.g., in-vitro diagnostics, pharmaceutical) and region (e.g., North America, Asia, Europe) (Global Market Study on Microfluidic Devices: North America to Lead Market Expansion Through 2031, n.d.). Current developments in the individual segments were analyzed and integrated into our project idea.

2.1 Materials

In 2021, polymers have already established themselves among the used materials. This development will become even more apparent by 2030. PDMS, in particular, has gained acceptance in many research laboratories due to its easy and quick manufacturing, biocompatibility and transparency. Thus, PDMS not only offers us easy manufacturing of our chip but also an opportunity for success in the microfluidics market in the future, which is why we decided to use this material to manufacture our chip.

2.2 Application

Point-of-care testing (PoCT) recorded the most significant share among application areas in 2021 (Microfluidics Industry Share | Microfluidics Market Forecast 2021-2030, n.d.) and will continue to show a high CAGR until 2025. Recently, this development has been mainly due to the Covid pandemic, where testing systems were an efficient method to control the pandemic. At the same time, the method convinces users with the opportunity for rapid and cost-effective diagnosis, which will become increasingly important in the future due to the expected increase in chronic diseases (Markt Für Mikrofluidik | 2022 - 27 | Branchenanteil, Größe, Wachstum – Mordor Intelligence, n.d.).

The search for new, improved forms of therapy is associated with this increase in diseases. Here, microfluidic devices enable rapid and efficient testing and packaging of therapeutics into drug delivery systems that can be purified and produced in large quantities at controllable scales. This fact will therefore lead to an increase in the demand for MF devices

in the field of tools for pharmaceutical and life science research as well as in the field of drug delivery (including the production of Nano-Drug Delivery Systems (NDDS) and Drug Delivery Systems (DDS)) (Microfluidics Industry Share | Microfluidics Market Forecast 2021-2030, n.d.). Therefore, we would like to offer our MF device in this market segment.

2.3 Region

For the planned market entry of our MF-Device, we would like to focus on Europe and the USA as target regions because North America held the largest market share in the microfluidics market in 2020. This is due to the high demand for PoCD, established market players in the region, advanced technology adoption, and research institutes' active participation in developing novel microfluidic devices (Microfluidics Market Size, Growth, Trends, Report 2021-2030, n.d.). Out of more than 3,200 companies and more than 200 academic research groups worldwide involved in the R&D pipeline, the US shared 44% of the global market in 2021 and is therefore in front.

Europe held the second largest share in 2021. Reasons for this include rapid injection molding and 3D printing advances to produce MF chips for nearly every application. At the same time, joint meetings and research projects are organized within Europe to promote the technical development of MF devices on the market. This share can also be seen in Figure 5, where it can be seen that Europe's share of the R&D pipeline is 25% (Global Trends in R&D 2022, n.d.).

Altogether, by introducing our product to the market in the US and Europe, we can reach about 65% of potential customers of our device and chip, respectively. However, it must be noted that the global microfluidics market seems competitive because of massive investments into new product development (Microfluidics Market Size, Growth, Trends, Report 2021-2030, n.d.) and only a few prominent players dominate the market. For example, in 2022, significant market shares went to companies such as uFluidix, Bio-Rad Laboratories Inc, Fluidigm Corporation, Illumina Inc, and PerkinElmer Inc. Therefore, our product could probably succeed only by making the device innovative enough and offering it for an affordable price (Markt Für Mikrofluidik | 2022 - 27 | Branchenanteil, Größe, Wachstum – Mordor Intelligence, n.d.). In the coming years, the microfluidics market will increase the most in Asia. Reasons for this include affordable labor, sophisticated research infrastructure and growing interest of international investors in this market. Therefore, this market could also be potential for our device in the future (Microfluidics Market Size, Growth, Trends, Report 2021-2030, n.d.).

3. Other relevant aspects

The aspects discussed above represent only a fraction of a complete market analysis. Especially concerning an actual market entry of a project, the market should also be defined by calculating key market figures such as market potential, market volume, market share and market capacity in terms of revenue and sales (Walter, n.d.). At the same time, barriers to market entry must be considered, such as capital requirements or economies of scale of operation and barriers to market exit. Also, concerning the competition, one must determine the degree of rivalry or how the competition might react to the introduction of the product to the market (Großklaus, 2014).

List of sources

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