Ziccum in brief

Ziccum's patented technology LaminarPace air-dries liquid vaccine into a thermostable powder vaccine. Before the vaccine is administered, the vaccine powder is mixed with liquid and can then be injected in exactly the same way as a liquid solution vaccine. The LaminarPace technology is gentle, air drying takes place at room temperature, resulting in powder vaccines becoming thermostable. This means that the vaccine can be transported and stored at room temperature, unlike today's vaccines that require costly, complex logistics with an unbroken freezer or cold chain.

Vision

Ziccum's vision is to increase vaccination coverage worldwide. This can be made possible by minimizing dependence on expensive, impractical, and energy-intensive refrigerated and frozen transport systems and storage.

Business model

Ziccum’s business model is to offer licenses and tech transfers to vaccine companies based on Ziccum's patent portfolio.

History

LaminarPace was developed by Inhalation Sciences Sweden AB (publ) to generate small amounts of micronized material for aerosolization. However, the many additional high-potential areas the technology could be applied to soon became apparent, and for that reason, Inhalation Sciences carried out a spin-out of LaminarPace into a subsidiary, Ziccum AB, which since mid-2017 has been developing and commercializing the technology on its own. Ziccum's shares were listed on Spotlight Stock Markets on October 25, 2018. On December 1 2020, Ziccum moved to Nasdaq First North Growth Market.

Market

Ziccum focuses on applying LaminarPace technology to already approved vaccines, or to vaccines that are under development. The vaccine market has seen very strong growth recently, driven by COVID-19. But even apart from COVID-19, the WHO predicts growth for almost all vaccines. In 2019, the global vaccine market was worth 33 BUSD, divided into 5.5 billion doses, excluding military and travel vaccines (WHO Global vaccine market report 2020). Global vaccine production for 2021 is forecast at about 20 billion doses. Future growth largely depends on how COVID-19 develops in terms of booster jabs and mutations.

LaminarPace technology

Ziccum has developed a method for the gentle air drying of biological drugs. The company's patented technology, LaminarPace, dries at room temperature, which provides a unique opportunity to develop stable, dry formulations of primarily sensitive biological substances.

The basic principle of LaminarPace's function is countercurrent spray drying with separate flows. The constituent liquid is nebulized, i.e. distributed in the inner column in a mist of very small droplets. The size of these can be controlled by a special net.

During the downward flow, the liquid droplets are vaporized, and the moisture is transported through a paper-based membrane which allows evaporation. The external upward flow of very dry air collects the evaporation which is then transported to the absorption column where the air is dried again.

The dry, micronized substance is retained inside the column and collected on a filter in the filter container. The drying cycle is a so-called semi-continuous process. The system not only retains all the properties of sensitive substances, but also allows great possibilities to control certain properties of the particles, e.g. particle size.

The powder produced during the process is normally very easy to dissolve, which enables flexible application possibilities, e.g. vials of intravenously administered drugs, inhalable drugs and even for topical application of single particles through the skin.

Shares

As of January 1 2021, the total number of shares was 9 606 200 and as of December 31 2021, the total number of shares was 11 006 056. 200 000 of the increase of shares is a result of the termination of the LTI 2018/21 option program where all warrants were exercised. The remaining increase of 1199 856 shares was added in the share issue that was initiated by the company in December 2021.

All shares have a voting ratio of 1.

The Board of Directors proposes that no dividend is paid for the financial year 2021.

Shareholders 2021-12-31

Name	Number of shares	Share capital	Votes
Försäkrings AB, Avanza Pension	939,100	8.5%	8.5%
Göran Conradson	760,738	6.9%	6.9%
Nordnet Pensionsförsäkring AB	395,855	3.6%	3.6%
Viskär AB	220,000	2.0%	2.0%
Kenneth Hopp	173,650	1.6%	1.6%
Swedbank Försäkring AB	150,494	1.4%	1.4%
Övriga aktieägare	8,366,219	76.0%	76.0%
Total	**11,006,056**	**100%**	**100%**

Share price

Ziccum AB was registered as a public company by the Swedish Companies Registration Office 2018-05-31.

Ziccum's shares were listed on Spotlight Stock Markets on October 25, 2018.

The share's closing price on the first trading day amounted to SEK 5.90.

Ziccum moved to Nasdaq First North Growth Market on December 1, 2020.

The share closing price on Sep 30 2021 amounted to SEK 10.48.

Transactions with related parties

During the reporting period, fees charged by related parties were invoiced as follows:

The Chairman of the Board, Fredrik Sjövall, has through Axelero AB invoiced fees amounting to 93 kSEK for project management.

Board member Kristian Kierkegaard has through Kristian Kierkegaard Holding AB invoiced SEK 240 thousand for work in connection with the share issue.

Board fees have been paid in accordance with resolutions at the Annual General Meeting.

There have otherwise been no significant transactions with related parties.

Significant risk and uncertainties in brief

Ziccum's significant risk and uncertainty factors include business-related risks as well as risks related to market and technology development, patents, competitors and future financing.

The company's value is largely dependent on the success of the company's development projects and the ability to enter into partnerships, and that LaminarPace receives broad market acceptance. Ziccum is in the commercialization phase and there is a risk that the company will not reach sufficient profitability.

The company has not generated sufficient income to achieve a positive cash flow, which means that the company needs access to capital before its cash flow becomes positive.

It is the company's assessment that the company has the required financing by the end of Q3 2022.

In light of the outbreak of the coronavirus and COVID-19, Ziccum is closely monitoring the development of events and taking measures to minimize or eliminate the impact on the company's operations. Ziccum follows guidelines from the Swedish Public Health Agency. Ziccum has been able to continue its internal operations without significant impact on COVID-19. However, there is a risk of delays in the Company's external collaborative projects due to the pandemic.