

## **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. A strategically important milestone is the establishment of a Fill and Finish production facility containing LaminarPace technology.

### **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 June 30 2021, the total number of shares was 9 806 200. The increase of 200 000 shares is due to the termination of the LTI 2018/21 option program where all warrants were exercised.

All shares have a voting ratio of 1.

### Shareholders 2021-09-30

Name	Number of shares	Share capital	Votes
Göran Conradson	760,738	7.8%	7.8%
Försäkrings AB, Avanza Pension	695,266	7.1%	7.1%
Nordnet Pensionsförsäkring AB	263,036	2.7%	2.7%
Viskär AB	220,000	2.2%	2.2%
Kenneth Hopp	164,350	1.7%	1.7%
Rolf Örell	150,000	1.5%	1.5%
Rest of the shareholders	7,552,810	77.0%	77.0%
<b>Total</b>	<b>9,806,200</b>	<b>100%</b>	<b>100%</b>

### 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 16.90.

### Share related incentive programs

At the Annual General Meeting on April 27 2021, it was decided to introduce a long-term incentive program by issuing warrants to the Board (LTI 2021/2024), as well as a long-term incentive program for the company's employees consisting of employee stock options (LTI 2021: 1). No of the options entail the right to a dividend.

Based on the existing number of shares in the company, the dilution as a result of the incentive programs, assuming that all warrants are exercised for new subscription of shares, is approximately 1% of the number of shares and votes.

#### LTI 2021/24

The exercise price per share for LTI 2021/2024 amounts to SEK 28.8 and subscription can take place during the period from 1 May 2024 to 31 May 2024. The incentive program means that participants are offered to subscribe warrants at market value calculated according to the Black-Scholes valuation model.

A prerequisite for participation in the incentive program is that the participant has entered into a pre-purchase agreement with Ziccum, whereby Ziccum, with certain exceptions, reserves the right to repurchase warrants if the board member's assignment in Ziccum ends or if the participant wishes to transfer the options before the warrants can be exercised.

The Board was offered to acquire a maximum of 9 200 warrants each and all chose to acquire the maximum number, which resulted in a total of 46 000 warrants being issued.

#### LTI 2021:1

LTI 2021: 1 runs for three years and means that participants are granted employee stock options free of charge that give the right to acquire shares in Ziccum at a subscription price corresponding to the share's quota value.

Each employee stock option gives the right to subscribe for a new share in Ziccum, alternatively up to 40% of the number in synthetic options that give the right to cash compensation instead of shares. Each synthetic option entitles the participant to receive a cash payment corresponding to the value of a share at the time of payment.

The options will be expensed as personnel costs over a period of three years, without affecting the company's cash flow. If employee stock options are exercised, LTI 2021:1 will also entail costs in the form of social security contributions.

Social security contributions will be expensed in the income statement during a period of three years. The company intends to hedge the entire cost of social security contributions through an issue of warrants, which may be exercised by a financial intermediary in connection with the exercise of the employee stock options. If the company chooses to implement such hedging measures, the social security contributions will not affect the company's cash flow.

A total of 55 796 options were issued, of which 13 340 of them relate to hedging of social security contributions.

During the reporting period, costs relating to LTI 2021:1 have been charged for the period 171 kSEK of which 37 kSEK relates to social security contributions.

## 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 38 kSEK for project management.

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, WHO and ECDC (European Center for Disease Prevention and Control). 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.