

# Q2

## Interim report January–June 2021

AlzeCure® is a Swedish pharmaceutical company that develops new innovative drug therapies for the treatment of severe diseases and conditions that affect the central nervous system, such as Alzheimer's disease and pain – indications for which currently available treatment is very limited. The company is listed on Nasdaq First North Premier Growth Market and is developing several parallel drug candidates based on three research platforms: NeuroRestore®, Alzstatin® and Painless.

NeuroRestore consists of two symptomatic drug candidates where the unique mechanism of action allows for multiple indications, including Alzheimer's disease, as well as cognitive disorders associated with traumatic brain injury, sleep apnea and Parkinson's disease. The Alzstatin platform focuses on developing disease-modifying and preventive drug candidates for early treatment of Alzheimer's disease and comprises two drug candidates.

Painless is the company's research platform in the field of pain and contains two projects: ACD440, which is a drug candidate in the clinical development phase for the treat-

ment of neuropathic pain, and TrkA-NAM, which targets severe pain in conditions such as osteoarthritis. AlzeCure aims to pursue its own projects through preclinical research and development to an early clinical phase and is continually working on business development to find suitable outlicensing solutions with other pharmaceutical companies.

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For more information, please visit [www.alzecurepharma.se](http://www.alzecurepharma.se).

150,000

It is estimated that approximately 150,000 people in Sweden are living with dementia diseases, a figure that is expected to triple by 2050. Every year, around 25,000 people are affected, resulting in major care and healthcare costs for society. The direct costs are estimated to be higher than those caused by cancer and cardiovascular diseases combined.

50 million

Alzheimer's is the most common form of dementia, and worldwide approximately 50 million people were estimated to be living with dementia-related diseases in 2020, a figure that is expected to rise to 82 and 152 million sufferers by the years 2030 and 2050 respectively.

## Financial information

### April-June 2021

Figures in parentheses refer to the corresponding period of the previous year.

- Net sales during the period totaled SEK 0 thousand (0).
- Loss for the period totaled SEK -15,693 thousand (-18,407).
- Earnings per share, basic, totaled SEK -0.42 (-0.49).
- Total assets at the end of the period amounted to SEK 82,030 thousand (160,057).
- Cash and cash equivalents at the end of the period totaled SEK 77,915 thousand (153,325).

### January-June 2021

Figures in parentheses refer to the corresponding period of the previous year.

- Net sales during the period totaled SEK 0 thousand (0).
- Loss for the period totaled SEK -38,655 thousand (-32,191).
- Earnings per share, basic, totaled SEK -1.02 (-0.85).
- Total assets at the end of the period amounted to SEK 82,030 thousand (160,057).
- Cash and cash equivalents at the end of the period totaled SEK 77,915 thousand (153,325).

## Significant events

### January-March 2021

- The company appointed Associate Professor Märta Segerdahl Storck, MD/PhD, to serve as Chief Medical Officer (CMO). Märta took up the position on April 1 and is responsible for our clinical development activities. She is also part of AlzeCure's management group.

### April-June 2021

- On April 19 the company received, slightly ahead of plan, positive and significant efficacy data from the phase Ib clinical trial with the drug candidate ACD440 for neuropathic pain. It was also well tolerated as a topical treatment.
- Eva Lilienberg was elected to serve on AlzeCure's Board of Directors at the Annual General Meeting on May 17. Eva further strengthens the company with her broad international regulatory and commercial experience.

### Significant events after the end of the period

No significant events have occurred after the end of the period.

## A word from the CEO

The AlzeCure team continues to make good progress according to plan, in high-profile areas that are becoming increasingly relevant, such as the US Food and Drug Administration's (FDA) approval of a new drug for Alzheimer's disease, the first in 18 years, which is expected to boost interest in the Alzheimer's field.

During the second quarter, we communicated positive data from our Phase Ib clinical trial of ACD440 for neuro-pathic pain and are now preparing for a Phase II trial and a pre-IND meeting with the FDA. We also focused on running the Phase I clinical trial for ACD856 in Alzheimer's disease and on further developing compounds in our pre-clinical pain project, TrkA-NAM, with the aim of choosing a drug candidate for the project in the second half of 2021. Thus we have once again closed the books on yet another positive and very active quarter at AlzeCure.

With the FDA approval of the Alzheimer's drug Aduhelm™ (aducanumab) in June, and the two Alzheimer's drugs donanemab and lecanemab granted Breakthrough Designation from the FDA, interest in Alzheimer's disease continues to increase. This growing interest is evident among private investors, institutions and pharmaceutical companies. The annual price of treatment for Aduhelm in the US has been set at USD 56,000. If the drug is prescribed to only 5 percent of diagnosed Alzheimer's patients in the US at this cost, Aduhelm is expected to become the second largest drug in the US, with annual sales of USD 17 billion (Nature, June 8, 2021). This shows the huge economic potential in the field of Alzheimer's.

Through its decisions and announcements, the FDA has demonstrated its understanding of the great medical need in this area and its support for the amyloid hypothesis: that the build-up of harmful amyloid beta in the brain plays a fundamental role in the development of Alzheimer's disease. Aducanumab, donanemab and lecanemab are all antibody therapies aimed at clearing harmful amyloid beta in the brain.

The FDA decision is favorable for AlzeCure and our Alzheimer's projects within our Alzstatin and NeuroRestore research platforms. We see great advantages in our projects, which are based on small molecule programs: they do not require invasive administration in the inpatient setting, but can be taken as a tablet at home; they

can be designed to better penetrate the blood-brain barrier; they are potentially more cost-effective compared with biologics and, in the case of Alzstatin, it may even prevent disease. With the dementia and Alzheimer's patient population expected to triple over the next 30 years, and already amounting to 50 million patients worldwide, there is high demand for preventive medicines that prevent damage to brain structures and are not resource-intensive.

Our Alzstatin platform aims to develop preventive disease-modifying treatments for Alzheimer's by reducing production of harmful amyloid-beta and thereby preventing accumulation of pathological amyloid in the brain. In the Alzstatin program we have preclinical studies that have shown that we can reduce the quantity of harmful amyloid-beta by 50 percent. ACD679 is currently undergoing preclinical toxicological studies, at the same time that research continues in the ACD680 follow-up project. This development project will ensure that we can choose the best possible Alzstatin compound for future clinical trials.

ACD856 is part of the innovative NeuroRestore platform with a primary focus on symptomatic treatment of Alzheimer's – in other words, improving the memory and cognitive problems that are so characteristic of the disease. In the ongoing clinical trial for ACD856 we are assessing safety and tolerability, where we expect the initial results during the summer of 2021. Our other drug candidate in



*Martin Jönsson, CEO*



the NeuroRestore platform, ACD857, is in the preclinical development phase. We plan to develop this compound for an indication within the field of cognitive dysfunction, such as Alzheimer's disease.

We also see continued promising progress in our pain platform Painless, which consists of two projects, ACD440 and TrkA-NAM. ACD440 is a VR1 antagonist for topical use aimed at treating neuropathic pain. In December 2020, we initiated a Phase Ib clinical trial with ACD440 and in April, ahead of schedule, we were able to report positive and significant safety and tolerability results and demonstrate early efficacy signals. The neuropathic pain indication currently generates global pharmaceutical sales of USD 10.8 billion in 2020 and is expected to grow significantly to over USD 25 billion by 2027 (GlobalData, 2021).

Research shows that half of patients with neuropathic pain today do not achieve adequate pain relief. This indicates the great unmet medical need, as well as the potential in this field and for our ACD440 project. We are now preparing for a pre-IND meeting with the FDA in the autumn in order to be able to apply to initiate a Phase II study by the end of this year. The patients we intend to

treat suffer from chronic pain, a patient population that is expected to continue to grow, in part due to the aging population.

TrkA-NAM, our second pain project within the Painless platform, is aimed at treating severe pain conditions. One example is osteoarthritis, which is estimated to affect over 250 million people. After having received positive efficacy data from our preclinical pain studies, we are now actively working to select a final drug candidate for the project, which we expect to do during the second half of 2021.

During the quarter we continued to have a strong focus on marketing communication and participated in several meetings and events. In May, we arranged a symposium at Redeye with a focus on pain. The symposium was very well received and is recorded and available on our website. During the quarter, we also published several papers, including abstracts and posters that were accepted at scientific congresses. These venues include the AAIC Alzheimer's Congress and the IASP World Congress on Pain, demonstrating the interest in and the scientific quality of the data we generate. We are constantly working on reaching out to both private and institutional investors, as well as other pharmaceutical

and research companies that may be interested in investing in or in-licensing our development projects, or alternatively, in entering into a partnership.

The Board of Directors has also added a new member, Eva Lilienberg, to strengthen the AlzeCure organization. Eva has extensive commercial and international experience in all aspects of clinical drug development with an emphasis on regulatory affairs, which is important as we advance our development projects and prepare to become a Phase II company

I am pleased to report that AlzeCure continues to make good progress together with our talented, dedicated and motivated employees. We have several promising projects under development, all within fields with great unmet medical need, which is incredibly motivating. The performance we achieved to date strengthens our conviction that we shall be able to deliver as stated in our communicated objectives during the year.

Stockholm August 2021

*Martin Jönsson*

## Five important milestones for 2021

1

Results from the SAD study, phase Ia clinical trial for NeuroRestore® ACD856 – summer 2021

2

Results from the phase Ib clinical trial for Painless ACD440 – summer 2021

3

Start the MAD study, phase Ia clinical trial for NeuroRestore® ACD856 – H2 2021

4

Choose the first drug candidate for the TrkA-NAM pain project – H2 2021

5

Apply for phase IIa clinical trial for Painless ACD440 in neuropathic pain – H2 2021

” AlzeCure continued to develop according to plan and during the second quarter, we had a positive and significant readout in our Phase Ib clinical trial with ACD440 for neuropathic pain, a project we are now preparing for a Phase II trial and a meeting with the FDA.

Martin Jönsson, CEO

# Project portfolio

AlzeCure works with several research platforms:

NeuroRestore® and Alzstatin® – with a focus on Alzheimer’s disease, where the leading candidate ACD856 is in clinical development phase.


Painless – focuses on pain treatment and contains two projects: ACD440 in clinical development phase and TrkA-NAM in research phase.

There are several drug candidates in the various platforms: two candidates in NeuroRestore and two candidates in Alzstatin. There are also two projects in the Painless platform. A diversified portfolio of drug candidates paves the way for other indications, such as cognitive disorders associated with Alzheimer’s, traumatic brain injury, sleep apnea and Parkinson’s disease, as well as for severe pain in conditions such as neuropathy and osteoarthritis.

- The NeuroRestore platform is developing a new generation of symptomatic drugs for the treatment of cognitive disorders, such as Alzheimer’s disease. The biological mechanism also enables targeting other potential indications, including depression and cognitive dysfunction in Parkinson’s disease, traumatic brain injury and sleep disorders.
- Innovative disease-modifying and preventive drugs for Alzheimer’s disease are under development within the Alzstatin platform.
- The Painless platform includes two non-opioid projects: TrkA-NAM and ACD440, which both focus on severe pain conditions.
  - The clinical drug candidate ACD440 was in-licensed in January 2020 and is being developed for the treatment of neuropathic pain, a field with great unmet medical need. The project is currently in the clinical development phase.
  - The TrkA-NAM project is aimed at treating severe pain caused by disorders such as osteoarthritis, which today lacks sufficiently effective treatment. The project is currently in the research phase.

## AlzeCure’s project portfolio<sup>1</sup>

Platform	Candidate	Indication	Research phase	Preclinical phase	Phase I	Phase II	Phase III
NeuroRestore	ACD856	Alzheimer’s disease Sleep disorders/ Traumatic brain injury Parkinsons Disease	In progress	In progress			
	ACD857	Alzheimer’s disease	In progress	In progress			
Alzstatin	ACD679	Alzheimer’s disease	In progress	In progress			
	ACD680	Alzheimer’s disease	In progress				
Painless	ACD440	Neuropathic pain	Completed				
	TrkA-NAM	Osteoarthritis pain	In progress				

 In progress  Completed

1) For definitions of the phases, please see the AlzeCure Pharma website, [www.alzecurepharma.se](http://www.alzecurepharma.se)

# Project development

AlzeCure is focused on research and development of innovative and effective new small molecule drugs for diseases that affect the nervous system and the brain, with a focus on Alzheimer's disease and pain. The need for new treatments for these severe illnesses is great; for example, a disease-modifying therapy for Alzheimer's is expected to be able to generate more than USD 10 billion in annual sales.

The company is simultaneously developing four drug candidates based on the two research platforms NeuroRestore and Alzstatin, along with two projects within the Painless platform – TrkA-NAM and ACD440.

A diversified portfolio of drug candidates paves the way for other indications, such as cognitive dysfunction associated with traumatic brain injury, Parkinson's disease and sleep disorders. With its broad portfolio of assets, the company maximizes shareholder value by working in multiple indication areas where there is scientific support for the biological target mechanisms.

## Neurology

Within NeuroRestore, a new generation of symptomatic drugs is being developed for the treatment of cognitive dysfunction (memory disorders) in Alzheimer's disease. The company initiated the first clinical trial with the primary drug candidate in NeuroRestore, ACD856, in late 2019. The study was completed on schedule in the second quarter of 2020, with results supporting the continued clinical development of ACD856. Continued clinical trials were initiated in late 2020, also according to plan. These studies, which are part of the phase I program for the drug candidate, have the primary purpose of assessing safety and tolerability in humans.

ACD857 is in the research phase and also has the primary indication of cognitive dysfunction/Alzheimer's disease. At the end of last year the drug candidate entered into the next phase of development, which aims to assess the preclinical safety profile before clinical trials can begin.

AlzeCure's disease-modifying research platform for Alzheimer's disease, Alzstatin, focuses on reducing the production of toxic amyloid beta (A $\beta$ ) in the brain. A $\beta$  plays a key pathological role in Alzheimer's disease and begins to accumulate in the brain years before clear symptoms develop.

The target mechanism in Alzstatin is confirmed by previously reported study results, which we believe validate the amyloid hypothesis and thus Alzstatin's focus.

The leading drug candidate in the Alzstatin platform, ACD679, is currently undergoing the important safety pharmacological and toxicological studies necessary before clinical trials may begin. Alongside this work, the development of an additional drug candidate is in progress (ACD680) to ensure that the company has the best compound for clinical studies.

”Diagnostics and biomarkers within the field of Alzheimer's is an active field of research, where key advances made in recent years have been of great importance for diagnostics, as well as for evaluating new drug candidates.

Professor Henrik Zetterberg, University of Gothenburg;  
University College of London

1 **NeuroRestore®** – is developing a new generation of symptomatic drugs for the treatment of cognitive disorders, such as Alzheimer's disease.

2 **Alzstatin®** – is developing innovative disease-modifying and preventive drugs for Alzheimer's disease.

3 **Painless** – contains two projects: TrkA-NAM and ACD440, which both focus on severe pain conditions.

## Pain

AlzeCure's Painless platform contains two projects aimed at new treatments for pain. Both projects involve non-opiates, which is important to emphasize, because of the inherent risk associated with opiates for abuse, overdose and secondary injuries – which has led to avoidance of opiates as first-line treatment for pain. Despite this treatment problem they are still frequently used, for which reason the need for new non-opiate treatments is great.

TrkA-NAM builds on the knowledge amassed and assets developed in the NeuroRestore platform. The project, which is aimed at severe pain in conditions such as osteoarthritis, is currently in the research phase and the company received the first preclinical efficacy data in 2020, according to plan. The aim is for the project to select a drug candidate in the second half of 2021.

In January 2020, a drug candidate in the clinical development phase aimed at treating neuropathic pain, ACD440, was in-licensed. This project is an important strategic in-licensing that strengthens the company's current clinical portfolio. The ACD440 project has its origins in Big Pharma and is based on strong scientific grounds. The compound that is being developed as a gel for topical treatment has previously undergone clinical trials, but at that time as an oral treatment. As planned, AlzeCure initiated a Phase Ib clinical trial of the drug candidate in late 2020, which was completed in April this year and showed positive proof-of-mechanism data, i.e. an analgesic effect in humans. The efficacy of ACD440 was clearly significant compared with placebo. It was also well tolerated as a topical gel on the skin, indicating good suitability for further clinical development as topical treatment for neuropathic pain conditions.

# 50 million

**In the US alone, an estimated 50 million adults live with chronic or severe pain, and more people suffer from pain than diabetes, heart disease and cancer combined.**



” About 50 percent of neuropathic pain patients do not respond to current first-line treatment and AlzeCure is developing its new intended treatment specifically for this group of individuals.

# Market trends affecting AlzeCure®

## Increased social costs for Alzheimer’s and other neurodegenerative diseases.

Costs associated with Alzheimer’s and other neurodegenerative diseases are sharply rising and account for a substantial burden on the public healthcare system. The global cost to society for dementia is estimated at more than USD 1 trillion and is expected to triple over the next 30 years. These burgeoning costs increase the need for disease-modifying and/or preventive treatments appreciably.

## Increased need for treatment due to an aging population.

Old age is the greatest risk factor in dementia-related illnesses such as Alzheimer’s, but also for pain problems. Life expectancy is anticipated to rise globally as a result of improving living standards and improved health care.

## New treatment for Alzheimer’s disease targeting amyloid plaques receives FDA approval

An antibody therapy (Aduhelm) targeting amyloid pathology received approval in June as the first disease-modifying treatment for Alzheimer’s disease through the FDA’s Accelerated Approval process. The approval is based on a “surrogate endpoint,” in this

case the reduction of beta-amyloid in the brain. Two other antibody therapies targeting amyloid pathology have also recently been granted “Breakthrough Therapy” status, giving them access to the FDA’s other fast track processes, which could lead to a significantly faster pathway to market for drugs in this important area.

## Major pharmaceutical companies are allocating investments in CNS-related illnesses to specialized research projects.

An increasing number of major pharmaceutical companies are starting investment funds aimed at smaller research companies and drug companies, as this is where a great deal of innovation takes place. The trend favors smaller R&D companies as opportunities for licensing agreements concerning the research, development and commercialization of drug candidates are increasing.

## Development related to diagnostics & biomarkers

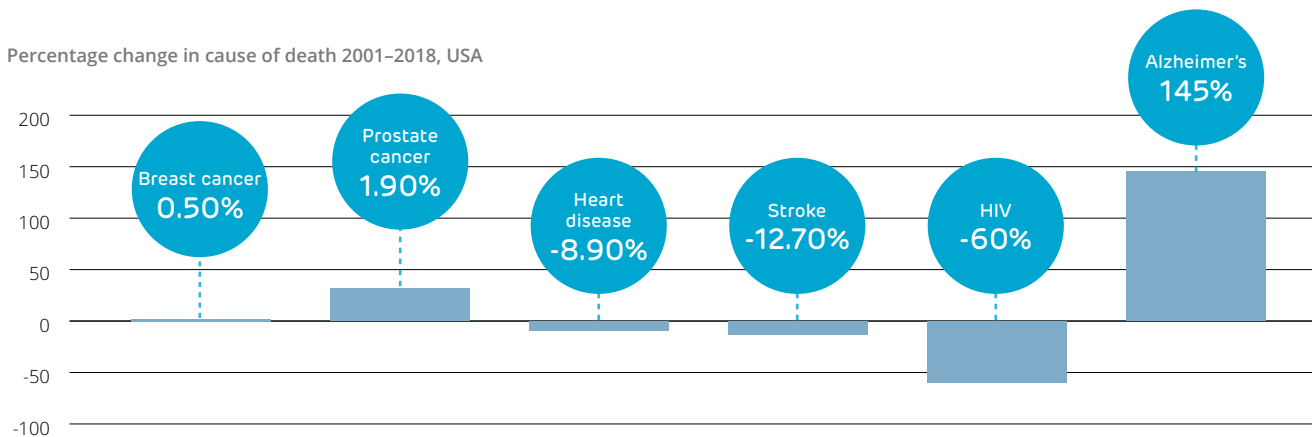
Alzheimer’s disease is currently diagnosed mainly through clinical examination, including a lumbar puncture combined with tests of cognitive ability and brain imaging (PET). A spinal fluid test is an invasive procedure in which spinal fluid is drawn for analysis. PET diagnostics is a nuclear medicine imaging method used to identify

differences between healthy brains and brains in people with Alzheimer’s. There is a great need to be able to correctly diagnose Alzheimer’s in order to include a correct population in clinical trials to develop drugs for the disease. Significant progress has been made through intensive work in the field, including recent findings that a combination of blood-based biomarkers and simple cognitive tests have very high sensitivity for detection of Alzheimer’s disease at an earlier stage.

## Great need for new pain treatments

In the US alone, an estimated 50 million adults live with chronic or severe pain, and more people suffer from pain than diabetes, heart disease and cancer combined. Data from Europe show similar results and the health and socioeconomic costs are estimated at 3-10 percent of gross domestic product in Europe. Regarding the efficacy of currently available drugs in the field, for example, only half of patients with neuropathic pain respond satisfactorily to current treatment. Because of the risk of abuse, overdose and secondary injuries, there is also an effort to avoid opiates for treatment of pain. Consequently, there is currently a high unmet medical need for new, non-opiate treatments in this field.

Percentage change in cause of death 2001–2018, USA



The mortality rate for Alzheimer’s disease has risen sharply, while several other causes of death have fallen.

**x3** The number of people worldwide with dementia is expected to triple from the current 50 million to 150 million in 2050.



# Alzheimer's disease

Alzheimer's is the most common form of dementia, with around 60-70 percent of all dementia cases stemming from this illness. It is a deadly disease that has a huge impact on sufferers and their relatives alike. Yet despite this, there is currently a lack of preventive and disease-modifying treatments.

Alzheimer's disease causes nerve cells in the brain to die. The parts of the brain usually affected are the hippocampus (the brain's memory center), the temporal and parietal lobes. The disease starts with amyloid beta (A $\beta$ ) protein beginning to aggregate in the brain, which ultimately form the amyloid plaques so characteristic of the illness. These have a negative impact on nerve cell function and lead, inter alia, to changes in the levels of neurotransmitters in the brain. These neurotransmitters, such as acetylcholine and glutamate, are necessary for nerve cells to communicate with each other and for the normal operation of the brain. With time, the ability of nerve cells to survive also deteriorates.

The reasons why some individuals develop the disease while others do not are as yet unknown, but it is clear that accumulations of A $\beta$  amyloid in the brain play a central part in Alzheimer's. The most common risk factors for developing Alzheimer's are old age and heredity. The disease may appear early, between the ages of 40 and 65 for the hereditary form, but is most common after 65.

Today, substantial sums are invested in medical research into Alzheimer's due to the extensive human suffering, and the costs to healthcare and society are considerable. Total global costs for dementia-related illnesses are estimated at around USD 1 trillion, which is expected to triple by 2050. The lack of effective symptomatic treatments and efficacious treatments for the course of the disease represent an urgent medical need. The few approved drugs sold in today's market only have a limited symptom-relieving effect and entail problematic side effects. Thus there is a very urgent medical need for new symptomatic and disease-modifying treatments. A disease-modifying therapy for Alzheimer's is considered capable of generating more than USD 10 billion in annual sales.

## Symptoms

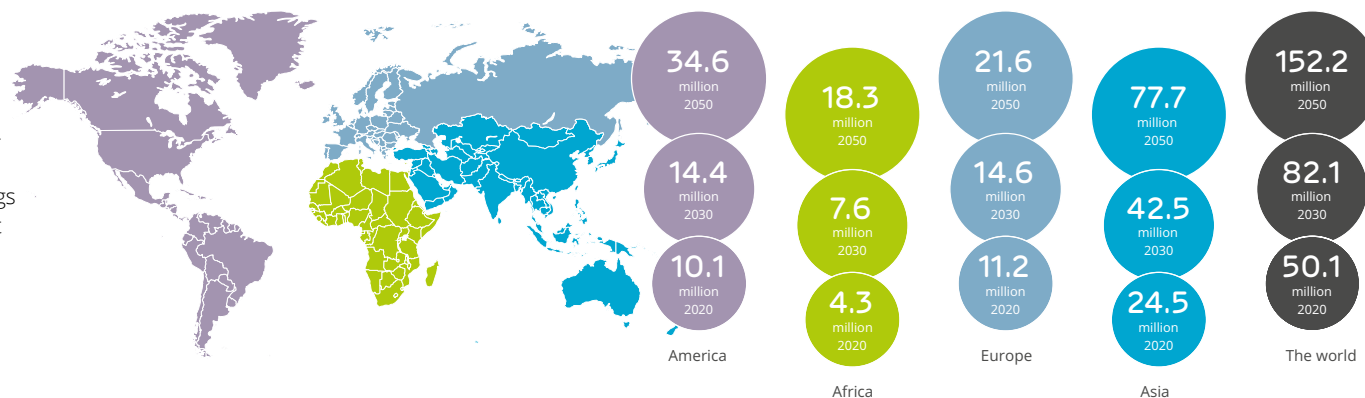
Usually, the first signs of Alzheimer's are impaired memory, difficulties in finding words, expressing oneself and understanding. Difficulties with the concept of time are also common. Eventually, sufferers experience orientation problems in their surroundings, and difficulties reading, writing and counting or managing practical tasks. Some have problems with perception and difficulty in recognizing what they see, and reasoning and planning become more difficult. With the passage of time, sufferers become more and more dependent on help from relatives and/or care services. Because a characteristic of the disease is its gradual onset, it can be difficult to identify when the problems actually began. Symptoms may also vary from person to person.

## Prevalence

As previously mentioned, Alzheimer's is the most common form of dementia, and worldwide over 50 million people were estimated to be living with dementia-related diseases in 2020, a figure that is expected to rise to 82 and 152 million sufferers by the years 2030 and 2050 respectively. Geographical distribution and the anticipated increase in dementia is shown in the figure below.

It is estimated that around 150,000 people in Sweden are living with dementia diseases, a figure that is expected to double by 2050. Every year, around 25,000 people are affected, resulting in major care and healthcare costs for society. The direct costs in Sweden are greater than those caused by cancer and cardiovascular diseases together.

Geographic distribution and expected growth of prevalence of dementia.

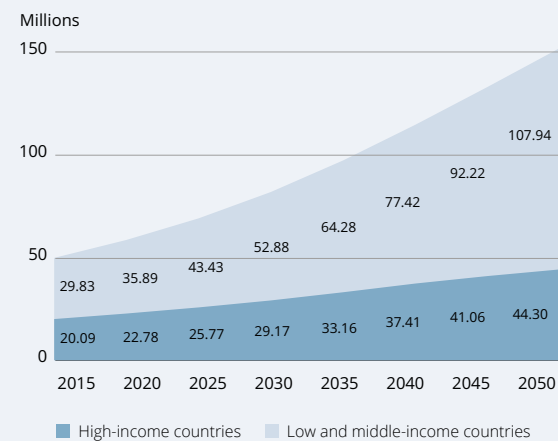


” The socioeconomic costs of Alzheimer’s disease are currently very high. At the individual level, the problems the disease causes for patients and their families are of course the most important. Currently there is no effective medication for the disease, and subsequently there is a high unmet medical need for both new symptomatic and disease-modifying drugs within this important area.

Professor Bengt Winblad, Karolinska Institutet

The figure below shows the expected growth in the number of cases of dementia between 2015 and 2050. The largest increase in number of cases of dementia and Alzheimer’s is expected to occur in low and medium income countries (LMIC), since these countries are expected to demonstrate a higher relative improvement in quality of life than high-income countries (HIC), which leads to an increased life expectancy. The need for novel therapies continues to be very high since there are currently no satisfactory treatment options for such patients.

The number of individuals with dementia in low and middle-income countries compared with high-income countries



## Treatment

Today there are two classes of symptomatic drugs for the treatment of Alzheimer’s disease.

**Cholinesterase inhibitors:** The drug allows the neurotransmitter acetylcholine to be active longer in the brain and thus boost nerve cell communications. The drug does not slow down progression of the illness, it only relieves the symptoms.

**NMDA inhibitors:** The drug affects glutamate signaling, which plays an important part in nerve cell communications.

However, the effect of cholinesterase and NMDA inhibitors is usually limited and associated with side effects. The need for alternative drugs with better symptom-relieving effect and fewer side effects is thus urgent.

AlzeCure’s NeuroRestore and Alzstatin platforms act in a completely different manner in their treatment of the disease than the drugs described above. NeuroRestore aims to improve communication between nerve cells by means of a unique mechanism so that memory function is improved in the patient while also avoiding difficult side effects. Alzstatin is aimed at preventing the very occurrence of the illness by reducing production of toxic amyloid in the brain and thereby preventing the formation of amyloid aggregates such as oligomers and plaque in the brain.

## Other diseases with cognitive dysfunction

There are several other diseases in which cognitive functions such as memory and learning are affected; in addition to the classic neurodegenerative diseases such as Alzheimer’s and Parkinson’s disease, other indications include sleep disorders (e.g. sleep apnea) and traumatic brain injury.

### Sleep apnea

An estimated 100 million people worldwide suffer from sleep apnea, the majority of whom are undiagnosed. In Sweden, about 300,000–400,000 people (10 percent of all women and 20 percent of all men) between the ages of 30 and 60 suffer from the condition, which is strongly associated with overweight. As the population gradually becomes more overweight, the incidence of sleep apnea is also expected to increase. There is also a hereditary component associated with the condition. One consequence of suffering from sleep apnea is that the patient suffers from extreme fatigue, since the body reflexively wakes up when breathing stops.

The body also suffers oxygen insufficiency since breathing is absent for long periods and the body does not get a chance to recover. This fatigue also leads to impaired cognitive ability. The patients’s symptoms are somewhat similar to Alzheimer’s, where memory, learning and other cognitive abilities are negatively impacted by sleep apnea.

### Traumatic brain injury (TBI)

Traumatic brain injury (TBI) is caused by external trauma where the nerve cells in the brain are immediately damaged. TBI is a major global health and socioeconomic problem and is a common cause of death, especially among young adults, and can cause lifelong injuries among those who survive.

Every year about 10 million people suffer from TBI worldwide. In North America, TBI affects about 1.7 million individuals annually, with total medical costs of more than SEK 600 billion. The global market for treatment of TBI is expected to grow from SEK 970 billion in 2017 to SEK 1,350 billion in 2024. The two most common causes of TBI are traffic accidents and falls. The majority of other causes of cases of TBI are violence, work or sports-related. The increase in TBI is due in part to the increased use of motor vehicles in low and middle-income countries.

According to the Glasgow Coma Scale, TBI is divided into three categories as follows:

- Mild TBI – loss of memory, confusion or disorientation for a maximum of 30 minutes
- Moderate TBI – loss of memory for 20 minutes – 6 hours
- Severe TBI – loss of memory for more than 6 hours

AlzeCure is focusing on improving cognitive ability in people with mild TBI. TBI has been shown to increase the risk of developing dementia-related diseases, such as Alzheimer’s disease and other neurodegenerative diseases, e.g. Parkinson’s disease. Studies show that a person who sustains a TBI has an approximately 24 percent increased risk of suffering from dementia.

The symptoms of TBI may be both physical and mental, and vary depending on the severity of the injury. Symptoms include loss of memory, headache, fatigue and mood swings, as well as sleep and concentration difficulties. About 30–70 percent of those who suffer from TBI also suffer from depression.

# Pain

Pain, both acute and chronic, afflicts millions of people around the world. Pain can be categorized in different ways, but one of the most common is nociceptive and neuropathic pain.

Nociceptive pain is the result of activity in signaling pathways caused by actual tissue damage or potentially tissue-damaging stimuli. Examples of nociceptive pain include postoperative pain, arthritic pain and pain associated with sports injuries. Nociceptive pain is usually acute and develops in response to a specific situation. It tends to disappear when the affected body part heals.

The body contains specialized nerve cells called nociceptors that detect harmful stimuli or things that can injure the body, such as extreme heat or cold, pressure and chemicals. These warning signals are then transmitted along the nervous system to the brain, resulting in nociceptive pain. This happens very quickly in real time, as when people quickly remove their hands if they touch a hot oven or stop bearing weight on an injured ankle. Other examples of nociceptive pain are post-operative pain and visceral pain.

Neuropathic pain is often chronic and is initiated by dysfunction or damage to the nervous system. Chronic pain is a disability that affects every aspect of the patient's life, which includes the ability of the individual to work and engage in social and leisure activities. Neuropathic pain affects a total of approximately 7-8 percent of the adult population. People with some conditions, such as diabetes and HIV, are affected to a greater extent where approximately 25 percent and 35 percent respectively experience neuropathic pain.

Peripheral neuropathic pain results from various types of damage to the nerve fibers, such as toxic, traumatic, metabolic, infectious or compressional injuries. Common symptoms are painful tingling or itching that can be described as a stabbing or burning pain, including a sensation of getting an electric shock. Patients may also experience allodynia (pain caused by a stimulus that usually does not cause pain) or hyperalgesia (increased pain from

a stimulus that normally provokes pain). Three common conditions of neuropathic pain are painful peripheral neuropathy caused by conditions such as diabetes, painful postherpetic neuralgia (shingles), and neuropathic pain induced by chemotherapy.

## Prevalence

An estimated 50 million adults in the US experience chronic or severe pain, and more Americans suffer from pain than diabetes, heart disease and cancer combined. The data from Europe show similar results and health and socioeconomic costs are estimated at 3-10 percent of gross domestic product in Europe.

The neuropathic pain market is characterized by high unmet medical need in all indications and in all major markets, where only half of patients respond to existing treatments. The patient population is expected to continue to grow, due to factors such as an aging population, an increased incidence of type 2 diabetes, and cancer that requires chemotherapy. The global market for neuropathic pain was valued at about USD 11 billion in 2020 and is expected to grow to USD 25 billion by 2027.

## Treatment

There is currently a major medical need for several different severe pain conditions. For example, only about 50 percent of patients with neuropathic pain respond to existing treatments. Because of the risk of abuse, overdose and secondary injuries, doctors nowadays avoid prescribing opiates as first-line treatment for pain. Despite this treatment problem they are still frequently used, and therefore the need for new non-opiate treatments is great.

# 7-8%

Neuropathic pain affects a total of approximately 7-8 percent of the adult population.

# 25 billion

The global market for neuropathic pain was valued at about USD 11 billion in 2020 and is expected to grow to USD 25 billion by 2027.

” One in five people in the population suffers from chronic pain that requires treatment. Living with pain is incredibly stressful for the patient, both physically and mentally. One of three patients seek medical care because of pain. The available treatments are not sufficiently effective and are often associated with addiction problems. There is great potential for a new drug here, especially with a favorable side effect profile and without risk of addiction.

Dr. Märta Segerdahl, CMO

# Comments on the report

## Financial Overview

SEK thousand	April-June 2021	April-June 2020	January- June 2021	January- June 2020	January- December 2020
Net sales	0	0	0	0	0
Operating profit/loss	-15,731	-18,458	-38,735	-32,309	-71,579
Earnings for the period and comprehensive income	-15,693	-18,407	-38,655	-32,191	-71,366
Earnings per share, basic (SEK)	-0.42	-0.49	-1.02	-0.85	-1.89
Research expenses as a percentage of operating expenses (%)	83.3	85.6	84.0	83.9	86.3
Total assets	82,030	160,057	82,030	160,057	117,827
Cash and cash equivalents	77,915	153,325	77,915	153,325	112,434
Debt/equity ratio (%)	87.9	93.7	87.9	93.7	94.0
Average number of shares, basic	37,765,715	37,765,715	37,765,715	37,765,715	37,765,715
Average number of employees	10	8	11	8	8

See the definitions below.

## Revenue and profit/loss

The company had no net sales during the period. Other operating income largely relates to currency gains this quarter as well. No government aid for increased sick pay was received during the quarter.

Earnings for the second quarter of 2021 totaled SEK -15,731 thousand (-18,458). The operating loss for the period January to June was SEK -38,735 thousand (-32,309). The company continued to conduct its research activities at an intensive pace during the second quarter, with steady development. Research expenses accounted for 83.3 percent of operating expenses in the second quarter. During the first half of 2021, research expenses continued to rise (+20%) compared with the same period the previous year. More information about research at AlzeCure can be found in the Project Portfolio and Project Development sections of this report.

Administrative costs were somewhat higher this quarter compared with the same period the previous year. The company continues to focus on communication and business development and has also expanded internationally in 2021.

The company had 11 employees on the closing date. The COVID-19 pandemic is still underway and the company takes ongoing necessary measures to protect its employees and limit any negative impact on the company's operations. The company's business has not been affected to any great extent by the pandemic, but like the rest of society, the company recognizes that the risks increase the longer the pandemic continues. However, the company hopes and believes that the ongoing vaccination program will reduce the risk.

Earnings per share, basic, totaled SEK -0.42 (-0.49) for the second quarter, and SEK -1.02 (-0.85) for the period January to June 2021.

## Financial position

At the end of the period, equity was SEK 72,100 thousand (149,930) and the debt/equity ratio was 87.9 percent (93.7).

Cash and cash equivalents at the end of the period totaled SEK 77,915 thousand (153,325).

In 2019 the company launched an incentive program with warrants aimed at the Board of Directors. A total of 110,000 warrants were issued.

During the second quarter of 2020 the company launched an incentive program, this time with warrants aimed at the company's Chief Executive Officer. A total of 300,000 warrants were issued. For more details regarding the warrant programs, please see "Share-related compensation programs" in the report.

As of the closing date a total of 410,000 warrants were issued, resulting in a dilution effect of 1 percent.

## Cash flow and investments

Cash flow from operating activities including changes in working capital for the second quarter of 2021 totaled SEK -16,194 thousand (-18,737). For the period January to June 2021, the corresponding cash flow totaled SEK -34,465 thousand (-28,979).

Cash flow from investing activities totaled SEK -54 thousand (-282) during the second quarter. For the period January to June, the corresponding cash flow totaled SEK -54 thousand (-309). The company mainly invests in laboratory equipment.



Cash flow from financing activities totaled SEK 0 thousand (114) for the second quarter of 2021. For the period January to June, cash flow from financing activities totaled SEK 0 thousand (114).

## Accounting policies and valuation principles

### General information and compliance with IAS 34

This interim report has been prepared in accordance with IAS 34 Interim Financial Reporting. AlzeCure Pharma AB (publ) is domiciled in Stockholm. Because the company is not a group, it applies IFRS with the adjustments required under RFR2 Accounting for legal entities.

### Significant accounting policies and valuation principles

This interim report has been prepared in compliance with the accounting policies and valuation principles applied in the company's most recent annual report.

### Significant estimates and assumptions

When preparing interim reports, the Board and the CEO must, in accordance with the applicable accounting policies and valuation policies, make certain estimates, assessments and assumptions that affect the recognition and valuation of assets, provisions, liabilities, income and expenses. The outcome may deviate from these estimates and assessments and will very rarely amount to the same sum as the estimated outcome.

The estimates and assessments made in the interim report, including the assessment of the main causes of uncertainty, are the same as those applied in the most recent Annual Report.

### Key ratios and definitions

*Earnings per share*: net sales for the period divided by the average number of shares during the period.

*Debt/equity ratio*: equity, and where applicable untaxed reserves (less deferred tax), in relation to total assets.

*Research expenses as a percentage of total operating expenses*: research expenses divided by operating expenses, which include research expenses, administrative expenses and other operating expenses. Research expenses include the company's direct expenses relating to research activities such as expenditures for personnel, material and external services.

### Significant risks and uncertainties

The company develops drug candidates and activities will always involve regulatory, market and financial risks. No significant changes regarding those risks and uncertainty factors took place during the period compared with those presented in the most recent annual report.

The COVID-19 pandemic is still underway and the company has taken the necessary measures to protect its employees and limit any negative impact on the company's operations. The company is carefully monitoring the situation and complying with the recommendations and restrictions of the Public Health Agency of Sweden. Additional measures will be taken as needed. The duration of the pandemic increases the risk that operations will be affected, but the company hopes and believes that the ongoing vaccination program will reduce the risk.

## Reconciliation of alternate performance measures

SEK thousand	April-June 2021	April-June 2020	January-June 2021	January-June 2020	January-December 2020
<i>Research expenses as a percentage of total operating expenses:</i>					
Research expenses	-13.334	-16.004	-32.867	-27.358	-62.356
Administrative expenses	-2.621	-2.587	-6.002	-4.975	-9.375
Other operating expenses	-60	-111	-277	-292	-508
<b>Total operating expenses</b>	<b>-16.015</b>	<b>-18.702</b>	<b>-39.146</b>	<b>-32.625</b>	<b>-72.239</b>
<b>Research expenses as a percentage of total operating expenses:</b>	<b>83.3%</b>	<b>85.6%</b>	<b>84.0%</b>	<b>83.9%</b>	<b>86.3%</b>
<i>Debt/equity ratio (%) June 30, 2021:</i>					
Total equity at end of period	72.100	149.930	72.100	149.930	110,755
Total assets at end of period	82.030	160.057	82.030	160.057	117.827
<b>Debt/equity ratio (%):</b>	<b>87.9%</b>	<b>93.7%</b>	<b>87.9%</b>	<b>93.7%</b>	<b>94.0%</b>

# The share, share capital & ownership structure

## The share

The share has traded on Nasdaq First North Premier Growth Market under the name ALZCUR since November 28, 2018. On June 30, 2021, the number of shares in the company totaled 37,765,715.

## Owners as of June 30, 2021

The ten largest owners as of June 30, 2021	Number of shares	Share capital and votes
BFCM P/C BFCM Sweden Retail FT	4,403,265	11.7%
FV Group AB	2,000,000	5.3%
AlzeCure Discovery	1,710,000	4.5%
Nordnet Pensionsförsäkring AB	1,692,871	4.5%
Sjuenda Holding AB	1,578,600	4.2%
SEB-Stiftelsen	1,400,000	3.7%
Futur Pension	1,051,700	2.8%
Thomas Pollare	881,877	2.3%
Pontus Forsell	873,643	2.3%
Gunnar Nordvall	852,000	2.3%
<b>10 largest owners</b>	<b>16,443,956</b>	<b>43.5%</b>
Other	21,321,759	56.5%
<b>TOTAL</b>	<b>37,765,715</b>	<b>100%</b>

## Share-related compensation programs

In 2019 the company launched an incentive program with warrants aimed at some members of the Board of Directors. A total of 110,000 warrants were issued: 35,000 warrants went to Thomas Pollare and 25,000 warrants each went to An van Es Johansson, Ragnar Linder and Pirkko Sulila Tamsen.

The warrants, which were issued at the market price as of May 22, 2019, entitle the holder to subscribe for shares during the period June 15–30, 2022. The issue price for newly subscribed shares totaled 150 percent of the volume-weighted average closing price for the company's shares on the Nasdaq First North Premier Growth Market during the 10 trading days preceding the Annual General Meeting on May 22, 2019.

In 2020 the company also launched an incentive program, this time with warrants aimed at the Chief Executive Officer. A total of 300,000 warrants were issued.

The warrants, which were issued at the market price based on an external valuation as of May 20, 2020, entitle the holder to subscribe for shares during the period June 15, 2023 – July 5, 2023. The issue price for newly subscribed shares totaled 150 percent of the volume-weighted average closing price for the company's shares on the Nasdaq First North Premier Growth Market during the 10 trading days preceding the Annual General Meeting on Wednesday, May 20, 2020.

The total dilutive effect of the two incentive programs is 1%.

## Financial calendar

Interim report Q3, July–September 2021	November 10, 2021
Interim report Q4, October–December 2021	February 24, 2022

# The Board's assurance

The Board of Directors and the CEO hereby certify that this interim report provides a true and fair view of the company's operations, position and results and describes significant risks and uncertainties facing the company.

Huddinge, August 25, 2021

Thomas Pollare  
*Chairman of the Board*

Eva Lilienberg  
*Board member*

Ragnar Linder  
*Board member*

Ellen Donnelly  
*Board member*

Martin Jönsson  
*Chief Executive Officer*

This report has not been reviewed by the company's auditors.

For more information, please see [www.alzecurepharma.se](http://www.alzecurepharma.se) or contact:  
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FNCA is the company's Certified Adviser.  
FNCA Sweden AB, +46 (0)8 528 00 399, [info@fnca.se](mailto:info@fnca.se).

# Income statement and other comprehensive income

SEK thousand	April-June 2021	April-June 2020	January-June 2021	January-June 2020	January- December 2020
Net sales	0	0	0	0	0
<b>Operating expenses</b>					
Research expenses	-13,334	-16,004	-32,867	-27,358	-62,356
Administrative expenses	-2,621	-2,587	-6,002	-4,975	-9,375
Other operating income	284	244	411	316	660
Other operating expenses	-60	-111	-277	-292	-508
<b>Operating profit/loss</b>	<b>-15,731</b>	<b>-18,458</b>	<b>-38,735</b>	<b>-32,309</b>	<b>-71,579</b>
<b>Profit/loss from financial items</b>					
Interest income and similar profit/loss items	39	51	81	119	214
Interest expenses and similar profit/loss items	-1	0	-1	-1	-1
<b>Loss after financial items</b>	<b>-15,693</b>	<b>-18,407</b>	<b>-38,655</b>	<b>-32,191</b>	<b>-71,366</b>
<b>Earnings for the period and comprehensive income</b>	<b>-15,693</b>	<b>-18,407</b>	<b>-38,655</b>	<b>-32,191</b>	<b>-71,366</b>
Earnings for the period per share, basic (SEK)	-0.42	-0.49	-1.02	-0.85	-1.89
Earnings for the period per share, diluted (SEK)	-0.42	-0.49	-1.02	-0.85	-1.89
Average number of shares, basic	37,765,715	37,765,715	37,765,715	37,765,715	37,765,715
Average number of shares, diluted	38,175,715	37,975,715	38,175,715	37,925,715	38,050,715



# Balance sheet

SEK thousand	June 30, 2021	June 30, 2020	December 31, 2020
<b>ASSETS</b>			
<b>Non-current assets</b>			
<i>Intangible fixed assets</i>			
Project rights	17	17	17
<b>Total intangible fixed assets</b>	<b>17</b>	<b>17</b>	<b>17</b>
<i>Tangible fixed assets</i>			
Equipment, tools and installations	1,713	1,848	1,944
<b>Total tangible fixed assets</b>	<b>1,713</b>	<b>1,848</b>	<b>1,944</b>
<i>Financial fixed assets</i>	7	7	7
<b>Total non-current assets</b>	<b>1,737</b>	<b>1,872</b>	<b>1,968</b>
<b>Current assets</b>			
<i>Current receivables</i>			
Advance to supplier	20	0	703
Trade receivables	80	122	8
Other current receivables	1,243	2,702	2,349
Prepaid expenses and accrued income	1,035	2,036	365
<b>Total current receivables</b>	<b>2,378</b>	<b>4,860</b>	<b>3,425</b>
<b>Cash and bank balances</b>	<b>77,915</b>	<b>153,325</b>	<b>112,434</b>
<b>Total current assets</b>	<b>80,293</b>	<b>158,185</b>	<b>115,859</b>
<b>TOTAL ASSETS</b>	<b>82,030</b>	<b>160,057</b>	<b>117,827</b>

SEK thousand	June 30, 2021	June 30, 2020	December 31, 2020
<b>EQUITY AND LIABILITIES</b>			
<b>Equity</b>			
Share capital	944	944	944
Share premium reserve	278,842	278,842	278,842
Accumulated profit/loss	-169,031	-97,665	-97,665
Profit/loss for the period	-38,655	-32,191	-71,366
<b>Total equity</b>	<b>72,100</b>	<b>149,930</b>	<b>110,755</b>
<b>Current liabilities</b>			
Trade payables	5,865	7,636	3,966
Other current liabilities	306	254	199
Accrued expenses and deferred income	3,759	2,237	2,907
<b>Total current liabilities</b>	<b>9,930</b>	<b>10,127</b>	<b>7,072</b>
<b>Total liabilities</b>	<b>9,930</b>	<b>10,127</b>	<b>7,072</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>82,030</b>	<b>160,057</b>	<b>117,827</b>

# Statement of change in equity

SEK thousand	Share capital	Share premi- um reserve	Accumulated profit/loss	Profit/loss for the year	Total equity
<b>Opening balance January 1, 2020</b>	<b>944</b>	<b>278,728</b>	<b>-46,807</b>	<b>-50,858</b>	<b>182,007</b>
Appropriation of earnings			-50,858	50,858	0
Warrant program		114			114
Earnings for the year and comprehensive income				-71,366	-71,366
<b>Closing balance December 31, 2020</b>	<b>944</b>	<b>278,842</b>	<b>-97,665</b>	<b>-71,366</b>	<b>110,755</b>
<b>Opening balance January 1, 2021</b>	<b>944</b>	<b>278,842</b>	<b>-97,665</b>	<b>-71,366</b>	<b>110,755</b>
Appropriation of earnings			-71,366	71,366	0
Earnings for the period and comprehensive income				-38,655	-38,655
<b>Closing balance June 30, 2021</b>	<b>944</b>	<b>278,842</b>	<b>-169,031</b>	<b>-38,655</b>	<b>72,100</b>

# Cash flow statement

SEK thousand	April-June 2021	April-June 2020	January-June 2021	January-June 2020	January- December 2020
<b>Operating activities</b>					
Operating loss before financial items	-15,731	-18,458	-38,735	-32,309	-71,579
<i>Adjustment for items not included in cash flow, etc.</i>					
Depreciation and amortization	161	120	285	229	495
Interest received	39	51	81	119	214
Interest paid	-1	0	-1	-1	-1
Cash flow from operating activities before changes in working capital	-15,532	-18,287	-38,370	-31,962	-70,871
<b>Statement of change in working capital</b>					
Change in trade receivables	0	-114	-72	-106	8
Change in other current receivables	680	-2,280	1,119	-2,290	-969
Change in trade payables	-1,367	1,245	1,899	4,639	969
Change in other current operating liabilities	25	699	959	740	1,355
<b>Net cash flow from operating activities</b>	<b>-16,194</b>	<b>-18,737</b>	<b>-34,465</b>	<b>-28,979</b>	<b>-69,508</b>
<b>Investing activities</b>					
Acquisition of tangible fixed assets	-54	-282	-54	-309	-671
<b>Cash flow from investing activities</b>	<b>-54</b>	<b>-282</b>	<b>-54</b>	<b>-309</b>	<b>-671</b>
<b>Financing activities</b>					
Warrant program	0	114	0	114	114
<b>Cash flow from financing activities</b>	<b>0</b>	<b>114</b>	<b>0</b>	<b>114</b>	<b>114</b>
<b>Cash flow for the year</b>	<b>-16,248</b>	<b>-18,905</b>	<b>-34,519</b>	<b>-29,174</b>	<b>-70,065</b>
Cash and cash equivalents at beginning of period	94,163	172,230	112,434	182,499	182,499
<b>Cash and cash equivalents at end of period</b>	<b>77,915</b>	<b>153,325</b>	<b>77,915</b>	<b>153,325</b>	<b>112,434</b>



## Contact details

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